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PERCEIVED DETERMINANTS OF THE MANAGERIAL EFFECTIVENESS OF PERFORMANCE MEASUREMENT IN MUNICIPALITIES

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À Luisinha, aos meus filhos, Francisco e Margarida e aos meus Pais

RESUMO

O aumento do desempenho organizacional através de maior eficiência e eficácia na alocação dos recursos públicos é essencial para os Municípios, um dos mais relevantes instrumentos para o desenvolvimento económico, social e cultural no âmbito da administração pública. A medição do desempenho é um dos mais importantes instrumentos de gestão ao serviço dos gestores dos municípios para tomarem as melhores decisões de modo a melhorar o desempenho organizacional. Utilizamos a "*stakeholder theory"* , a "*resource based view*" e a teoria da aprendizagem organizacional para entendermos o impacto relativo do apoio dos interessados internos, dos recursos intangíveis e da formação técnica na eficácia gestionária da medição do desempenho, no contexto dos Municípios.

Entrevistas exploratórias suportaram o desenvolvimento do questionário. Os dados foram recolhidos através de um questionário eletrónico dirigido a eleitos e dirigentes de municípios portugueses a partir do qual obtivemos uma amostra de 152 questionários. A análise dos dados foi efetuada com base no método "*Partial Least Squares - Path Modeling"*, uma técnica de modelação por equações estruturais, baseada na análise da variância.

Os principais resultados revelam que o apoio dos interessados é o maior determinante da eficácia gestionária da medição do desempenho, que os recursos intangíveis têm um efeito menor e que a formação técnica não tem qualquer efeito significativo.

São descritas as implicações e sugeridas recomendações para os eleitos e para os dirigentes dos municípios bem como para a agência do governo que tem a responsabilidade pelos municípios.

Palavras-chave: eficácia gestionária, apoio dos interessados, medição do desempenho, PLS-PM, municípios,

JEL: M10, M19

ABSTRACT

The quest for better performance through greater efficiency and effectiveness in the allocation of public resources is essential for municipalities as it is one of the public administration's most important instruments for economic, social and cultural development. Performance measurement is a key management tool as it allows managers in municipalities to take the best decisions in order to improve performance. This research uses stakeholder theory, the resource based view and organizational learning theory with the aim of understanding the relative impact of support from internal stakeholders (stakeholders' support), intangible resources and technical training in the managerial effectiveness of performance measurement in municipalities.

The survey instrument was drawn up with the support of results from exploratory interviews. Data was collected by an online questionnaire addressed to elected officials and managers in Portuguese municipalities. A sample of 152 questionnaires was gathered. Data was analyzed using Partial Least Squares Path Modeling, a variance-based structural equation modeling technique.

The main results reveal that stakeholders' support is the major determinant of the managerial effectiveness of performance measurement, while intangible resources have a minor effect and technical training has no significant effect.

Implications are drawn from these results and recommendations made for elected officials and managers in municipalities as well as the government agency which deals with them.

Keywords: managerial effectiveness, stakeholders' support, performance measurement, PLS-PM, municipalities.

JEL: M10, M19

EXECUTIVE SUMMARY

This DBA thesis follows the management consulting work I have undertaken in Portuguese municipalities since 2006 following the implementation of SIADAP (Public Administration Performance Measurement System), a framework designed to improve central, regional and local administration performance by means of performance measurement. The aim of the research was to understand what determines the managerial effectiveness of performance measurement and their relative effects.

At a time when public administration is under increased pressure to use taxpayers' scarce resources efficiently, adopting management tools such as performance measurement to transform the bureaucratic style of public administration is both difficult and challenging for most elected officials, managers and workers.

Building on the literature, we adapted four empirically tested constructs to develop a conceptual model in an attempt to understand the possible benefits of using performance measurement. My perspective furthers existing research, as stakeholder theory and the resource based view of the organization, seldom used in a public administration context, as well as organizational learning theory are integrated in one model. As such, this research tested a model that verified the impact of stakeholders' support, intangible resources and technical training on managerial effectiveness of performance measurement.

The mixed methodology started with exploratory in-depth interviews followed by a pre-test of the questionnaire. By means of an electronic survey addressed to elected officials and managers in municipalities, we gathered 152 questionnaires which were analyzed and tested by means of the partial least squares path modeling (PLS-PM), a variance-based structural equation modeling technique.

The findings support the hypotheses that stakeholders' support and intangible resources, e.g. organizational structure, organizational culture, and the skills of managers and workers, have a significant effect on the effectiveness of performance measurement. Surprisingly, technical training had no significant effect. This latter finding is important at both theoretical and managerial levels. Some studies found that, under certain circumstances, human resources training has no impact on performance (Bontis et al, 2002). This is relevant at the managerial level because the Portuguese municipalities

spent many millions of Euros of EU funds on human resources training. If this massive expenditure has no impact whatsoever on performance, as suggested by this study, further research is required to shed light on the root causes of this situation.

Another important finding is that elected officials and managers have a positive perception of the effects of performance measurement in municipalities.

Theoretical and managerial contributions are proposed as well as recommendations for elected officials, managers and the government agency that deals with municipalities. I believe that the development of a training plan in public management specifically for elected officials is the most important recommendation. In light of my practical experience, it is the elected officials, and not their managers, who take the key management decisions that will affect the economic and financial sustainability of municipalities. Thus, they require management knowledge that enables them to take better informed decisions.

Another key recommendation is that elected officials, managers and employees should focus on improving performance rather than on performance appraisal.

I hope that this research helps extend knowledge about the mechanisms that can guide municipalities to a better future through improved performance.

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LIST OF ABBREVIATIONS

ATAM: *Associação dos Técnicos Administrativos Municipais*

BSC: Balanced Scorecard

CEO: Chief Executive Officer

DBA: Doctor of Business Administration

DGAL: *Direção-Geral das Autarquias Locais*

ECB: European Central Bank

EU: European Union

GPS: Global Positioning System

IMF: International Monetary Fund

ISCTE-IUL: *Instituto Universitário de Lisboa*

KPI: Key Performance Indicator

MBO: Management by Objectives

MCS: Management Control Systems

NPM: New Public Management

PDCA: Plan-Do-Check-Act

PLS: Partial Least Squares

PLS-PM: Partial Least Squares - Path Modeling

POPH: *Programa Operacional Potencial Humano*

RBV: Resource-based view

SEM: Structural equation modeling

SIADAP: *Sistema Integrado de Gestão e Avaliação do Desempenho na Administração Pública*

Latent variables abbreviations:

Efe: Managerial effectiveness of performance measurement

Res: Intangible resources

Sup: Stakeholders´ support

Tra: Technical training

CHAPTER 1 – INTRODUCTION

Performance improvement is becoming increasingly critical for public organizations (Behn, 2003; Yang and Hsieh 2007). Performance measurement is a management process aimed at contributing to that improvement. Previous research has identified several determinants for the successful implementation of performance measurement systems in public organizations, (Berman and Wang 2000; Rodgers and Hunter 1991; Rodgers and Hunter 1992; Sotirakou and Zeppou 2006). However, because the successful implementation of performance measurement systems is context-dependent, many of those findings are difficult to apply to different public organizations. As a practitioner who helps to implement performance measurement systems in Portuguese municipalities, I felt I could contribute to research by gathering empirical evidence about what has an impact on improving the performance of municipalities.

This thesis studied the relative impact of three determinants (stakeholders' support, intangible resources and technical training) on the managerial effectiveness of performance measurement.

The managerial effectiveness of performance measurement is measured through outcomes such as enhanced efficiency on use of resources, cost efficiency, staff evaluation and priority setting (Yang and Hsieh, 2007).

The goal of performance measurement in government is to establish a system that can measure results of actions through the use of performance indicators in order to improve management and democratic governance (Hatry, 2002; Ho, 2006; Moynihan, 2006; Wholey, 1999).

The model demonstrates that stakeholders' support and intangible resources have a direct positive impact on the effectiveness of performance measurement.

The first section of this first chapter discusses the research questions and objectives. The second describes the researcher's personal and professional motives for this work. The third addresses the context of the study, the Portuguese municipalities, followed by the

expected contributions to theory and management practice. The final section presents the structure of the thesis.

1.1. Motivations for the research

The motivations for this thesis are both professional and academic.

In the early years of my professional life, back in 1981, I worked at a plastics processing factory where I were responsible for preparing and presenting a monthly management report with key performance indicators (KPI) covering several functional areas such as production, sales, human resources, economic and financial areas.

There was an annual plan against which these monthly indicators were compared. It could be considered a sort of management by objectives (MBO) system, because it lacked some organizational prerequisites described in the literature (Jun, 1976) such as for example "self-management and decentralization". When I started to work in my own company in 1985, I continued to use planning and KPIs for management control purposes.

In 1991 I joined an English management consultancy firm whose most important service was productivity improvement, mainly in production facilities. Although several tools were used to increase productivity, the management control system (MCS) was fundamental. It was an approach based on the PDCA concept (Plan-Do-Check-Act). A production target was set, based on the best result achieved in the past. Then the actual results were collected and checked against the target at regular intervals. Any relevant deviation from the target was analyzed to understand its root causes in order to eliminate or prevent them. A new iteration was done until the process could be considered under control, i.e. the deviations were limited to a certain predefined range. This concept was applied in both the operations area (production, maintenance, tool changes) and others such as sales or inventory control.

I continued to apply productivity improvement techniques in my consultancy work in different types of private organizations for several years, with the support of some different frameworks like MCS, Total Quality, Toyota Production System and Performance Measurement Systems.

Since 2004 I have been involved in consultancy work in public administration for the implementation of a management tool called "SIADAP" or "public sector performance measurement system". Municipalities have been legally required to apply SIADAP annually since 2006; however some did not use it for a number of years.

The SIADAP toolkit is an adaptation of the Balanced Scorecard (BSC) framework (Kaplan and Norton, 1992) and involves Management by Objectives (MBO).

The SIADAP set of tools was designed to improve performance (i.e. increase citizen satisfaction, increase efficiency, reduce costs, increase civil servants' skills), at all levels of public sector organizations and it is the basis for the annual performance appraisal of public organizations and their civil servants. It is a legal obligation to which every local government must comply. It strives to address political concerns to provide customers with a better service, along with more effective and efficient use of public resources.

There are several acts that define the rules and regulations that drive this process, the first of which is the Act nº 10/2004 published March 2004 that established SIADAP. Later, this was replaced by Act nº 66-B/2007 published December 2007 which only became compulsory for municipalities from 2010 onwards.

As a result of my knowledge of the Public Administration, in which I have undertaken management consulting projects since 1996, I am convinced that implementing performance measurement linked to individual performance appraisal, could be a lever for the necessary and desirable changes to increase the effectiveness and efficiency of municipalities.

I applied for the Doctor of Business Administration (DBA) course at ISCTE-IUL because I wanted to know the state of the art in terms of academic knowledge and develop a scientific approach that could deepen my insights from practical experience. My own professional and personal experience as a practitioner had made the many difficulties in implementing performance measurement systems in public administration organizations clear. In conclusion, I wanted to research the determinants of a better usage of resources in order to facilitate effective performance measurement. For the purposes of this research, I will follow Lebas and Euske's (2007: 127) definition of performance as "*the*

sum of all the processes that will lead managers to taking appropriate actions in the present that will create a performing organization in the future (i.e. one that is effective and efficient)".

These motivations are personal in that I want to learn more about performance measurement, but also professional due to the fact that I intend to use the knowledge gained to improve my consultancy work not only in the public administration but also with profit and not for profit organizations.

Following similar experiences in different countries in the past decades, since June 2004, performance measurement has been introduced in Portugal as a mandatory process in public administration. The pressure on public administration organizations to reach higher levels of performance and accountability has grown. Determinants for performance improvement in public organizations and implementation methodologies have been investigated by various researchers (Brown 2005; Murray and Dollery 2005; Poister and Streib, 1995;Pollanen 2005; Rodgers and Hunter 1992; Sotirakou and Zeppou 2006).

Previous research has identified several prerequisites for implementing, enabling and facilitating performance measurement systems, (de Waal 2003; Rodgers and Hunter 1992; Sotirakou and Zeppou 2006). Empirical models have been developed in order to understand relations between different variables such as organizational support, stakeholder participation and the managerial effectiveness of government performance measurement (Yang and Hsieh 2007).

Despite all research efforts, what determines the successful implementation of performance measurement systems remain unclear and the models developed have not yet provided an answer valid for all countries and types of organization. This knowledge gap further motivated this research project.

One of the most important determinants of the effectiveness of performance measurement in public administration is stakeholders' support. A definition of stakeholders was proposed by Freeman (1984:5) as: "*any group or individual that is affected or can affect the achievement of an organization's objectives*". Literature on performance measurement argues that stakeholders' support is a necessary condition for success (Berman and Wang,

2000, Franklin, 2002; Gianakis and Stone 1997; Joyce 1993; Melkers and Willoughby, 2005; Mikesell 1995).

The resource-based view of the firm (Wernerfelt, 1984) later developed by other authors (Hall, 1992; Grant, 1996a; Grant, 1996b) is a theoretical foundation that aims to explain the differences in an organization's performance. The implementation of a process like performance measurement seldom requires tangible resources (such as equipment or machines) but always requires intangible resources e.g. the organization culture, people's skills (Hall, 2002), knowledge about information systems and organizational capabilities (Grant, 1996a; Grant, 1996b).

Some theoretical arguments suggest that intangible resources are more likely to support performance than tangible resources (Amit and Schoemaker, 1993; Barney, 2001b; Hitt et al., 2001; Teece, 1998). Human capital is paramount in service industries like public administration, given its people intensive nature. Knowledge-related resources and other intangibles are considered to be the most important performance drivers in services industries (Bharadwaj et al., 1993; Canals, 2000; Hitt et al., 2001; Swartz et al., 1992). As such, this thesis intends to research the effects of intangible resources (such as the organizational structure, skills of managers and workers, know-how on information systems) on the effectiveness of performance measurement.

Implementing performance measurement, implies that elected officials, managers and workers need to develop new practical knowledge (e.g. what is an objective, how are output or outcome measures defined) and, in a context of public administration, to know the new regulations to be followed (Berman and Wang, 2000; Fountain et al., 2003; Hatry, 1999; Liner et al., 2001; Newcomer et al., 2002). As such, this thesis will research the effects of technical training on the effectiveness of performance measurement. From experience, I have evidence that technical training depends upon of both stakeholders' support and intangible resources (i.e. the organization culture, the competencies of managers). I will also research the technical training mediating role, between stakeholders' support and intangible resources and the effectiveness of performance measurement.

1.2. Research questions

My research aims to understand the determinants that can lead to effective performance measurement.

The main research questions are:

1) What are the main determinants of the managerial effectiveness of performance measurement?

Based on the literature review and on my personal experience, I studied support from stakeholders, intangible resources and technical training as the latent variables as they presented themselves as the most important.

2) What is the relative impact of stakeholders' support, intangible resources and technical training on the managerial effectiveness of performance measurement?

By means of an empirical model, I test the effects of stakeholders' support, intangible resources and technical training on the managerial effectiveness of performance measurement.

3) Do intangible resources have a mediating role between stakeholders´ support and the effectiveness of performance measurement?

4) Does technical training have a mediating role between stakeholders ´ support and between intangible resources and the managerial effectiveness of performance measurement?

There are several definitions for mediating variables: a variable in a chain whereby an independent variable causes the mediator which in turn causes the outcome variable, (Sobel, 1990); a variable that occurs in a causal pathway from an independent variable to a dependent variable, it causes variation in the dependent variable and is itself caused to vary by the independent variable (Last, 1988). I research the mediating roles of intangible resources and technical training, to have a better understanding of their relative impacts on the managerial effectiveness of performance measurement.

5) Do the different type of respondents, elected officials and managers, have a moderating role on the model relationships?

Moderation occurs when the relationship between two variables depends on a third variable. The third variable is referred to as the moderator variable or the moderator. The effect of a moderator variable is characterized as an interaction; i.e, a qualitative (e.g., role, education) or quantitative (e.g., dimension of a firm) variable that affects the direction and/or strength of the relation between independent or predictor variable and dependent or criterion variables (Baron and Kenny, 1986; Cohen et al., 2003)

1.3. The study context: Portuguese municipalities

Since 2006, I have been involved in the implementation of performance measurement in several municipalities using SIADAP. Municipalities are dynamic organizations due, among other reasons, to the fact that their customers have a dual role, i.e. citizens who on one hand receive the services they provide and on the other cast their votes in elections. Municipalities also compete with each other for customers, i.e. new investment projects, which bring more economic activity as well as more people to live in the municipality.

Comparing with central administration (i.e. public organizations directly ruled by central Government) senior management in municipalities have much more incentives to improve their management standards because they are under direct pressure from citizens and other competing municipalities.

In 2009, there were a total of 308 municipalities of varying sizes (in terms of population or budget) in Portugal. Portuguese municipalities can be grouped into three segments: “Large” with a total population of over 100,000 inhabitants, “Medium”, with more than 20,000 inhabitants and less or equal to 100,000 inhabitants, and “Small” with 20,000 inhabitants or less (Carvalho et al., 2009). There are 181 “Small”, 104 “Medium” and 23 “Large” municipalities in Portugal.

Currently, municipalities are some of the biggest economic organizations in their territory and are as well, in most cases, the biggest employer. While elected officials serve a four-year term, the managers in Municipalities are appointed for three years.

1.4. Expected research contribution

1.4.1. Expected theoretical contribution

I attempt to contribute to the literature in five ways. First, I propose a model that brings the resource-based view (RBV) theory to the public administration context in the study of performance measurement.

Second, I aim to study the support that internal stakeholders, elected officials, managers and workers give to a management change process in Portuguese municipalities, which is an environment where in most cases elected officials and managers are not highly skilled in management. To my best knowledge this has not yet been done.

Third, I research the relative impact of technical training in a management change process furthering previous research from other authors such as Yang and Hsieh (2007). Political leaders in Portugal consider training to be a key factor for the development of the country. The political agenda of the XIX Portuguese Government included the word training ("*formação*") 31 times in relation to different areas of activity (*Programa do XIX Governo Constitucional, 2011*)

Fourth, I advance theory by testing hypotheses about the determinants of the managerial effectiveness of performance measurement, in the context of Portuguese municipalities.

Finally, I contribute methodologically by using measures from different respondents at different levels, elected officials and managers, in the same municipalities, in order to prevent the possibility of common method bias (Podsakoff et al., 2003). To the best of my knowledge, almost all previous studies on performance measurement effectiveness used single respondents.

1.4.2. Expected managerial contribution

The research aims to offer insights into the determinants of effective performance measurement for elected officials and managers working in municipalities as well as for political decision makers in Parliament and Government.

Portugal is facing one of the worst economic crises in the last 100 years, due in part to the fact that productivity levels are low in comparison with our EU partners. The lack of economic growth over the last decade is also indicative of poor resource allocation. The significant public debt that caused the then Government to ask for financial support from EU, IMF and ECB in April 2011, also reveals low levels of accountability in the investment of public money.

The lack of information on resources, how they are being allocated and the results thereof could be a contributory factor. Performance measurement systems, which are based on information, can help improve economic results and show better ways of allocating resources and improving accountability.

My purpose is to contribute to improving the quality of management in municipalities by building a model which will shed light on the relative impact of different key determinants of the managerial effectiveness of performance measurement.

1.5. Structure of the thesis

This thesis has six chapters as depicted in figure 1.1.

In the first chapter I introduce the subject of the thesis and outline the researcher's motivations given that he is a practitioner and brings his field experience to the subject and the research problem and questions. Then I present the context of the study with a brief description of the Portuguese municipalities. In the final section I present the expected contributions to theory and practice.

Chapter 2 presents a literature review of the main constructs of the research: the effectiveness of performance measurement, stakeholders' support, intangible resources and technical training. I review the theoretical foundations for this research using the stakeholder theory, resource-based view and the organizational learning theory. I identify the major gaps in literature that this research intends to fill.

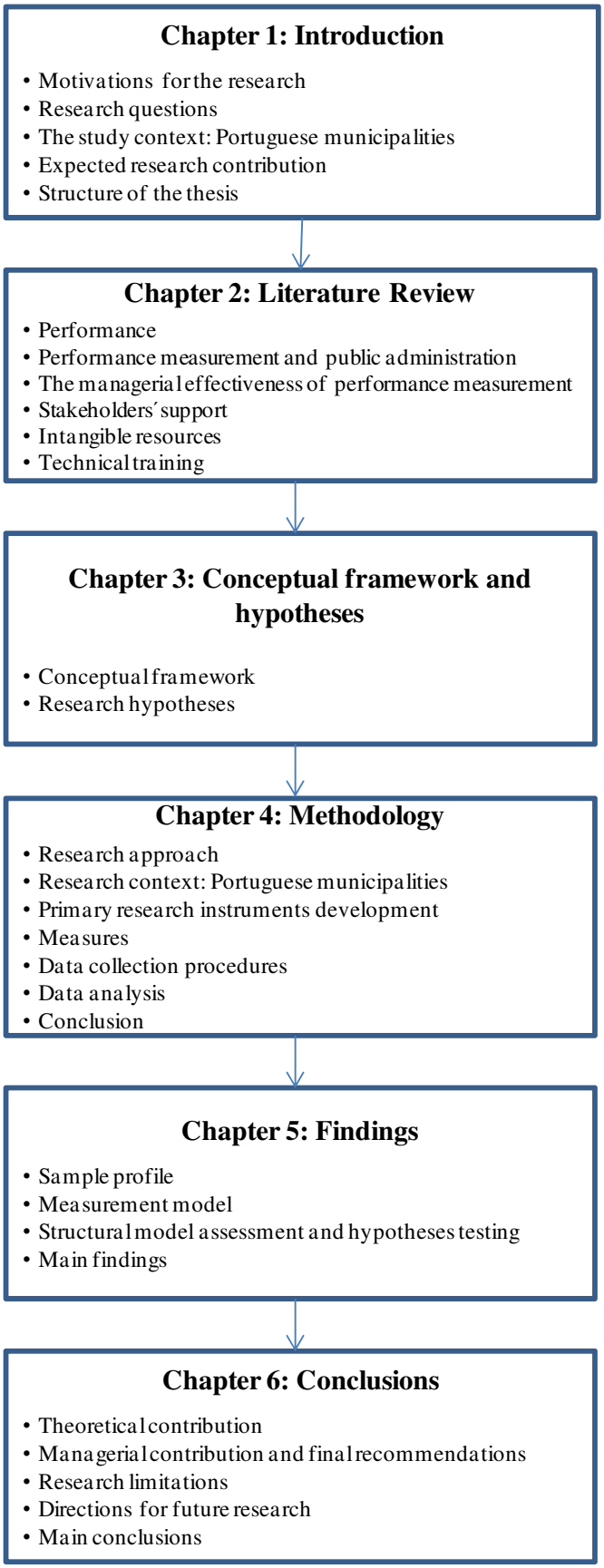
In chapter 3 I build and explain the hypotheses leading to the proposed conceptual framework. Stakeholders' support is directly related to intangible resources, technical training and the effectiveness of performance measurement and indirectly to the effectiveness of performance measurement through intangible resources and technical training. Intangible resources are directly related with technical training and the effectiveness of performance measurement and indirectly to the effectiveness of performance measurement through technical training. Technical training is related with the effectiveness of performance measurement.

In chapter 4 I describe the methodology used to test the hypotheses set in chapter 3. I explain and discuss the steps that were developed concerning research philosophies and approaches, the survey instrument, sampling, pretest, administration and data collection.

Chapter 5 presents the findings and discusses the extent to which the proposed hypotheses are confirmed or not. The discussion is supported by the literature.

Finally, in Chapter 6 I analyze the contributions to theory and practice and the implications for elected officials and managers in municipalities and politicians in Parliament and Government and suggest future avenues of research.

Figure 1.1 – Thesis structure



CHAPTER 2 - LITERATURE REVIEW

The goal of this chapter is to present the management literature related to the understanding of the key determinants that can make performance measurement effective.

The first section is about performance. I review the concept and its possible different definitions. I choose a position from the different possible definitions.

The second section is about the origins and the evolution of the utilization of performance measurement in the context of public administration.

The third section is dedicated to the managerial effectiveness of performance measurement construct. I present the concept and review the literature on the relationships between this construct and its determinants.

The fourth section is about stakeholders' support. After defining the term, I present its typology and then review the literature on its role in the effectiveness of performance measurement. Finally I discuss the Stakeholder theory that supports the inclusion of stakeholders' support.

The fifth section is about the intangible resources construct. Here I review the literature to address the influence of intangible resources on performance. The Resource-based view is reviewed as the supporting theory, extended to the context of public administration.

In the sixth section I present the technical training construct, I review the literature and address the possible mediating effects of intangible resources and technical training between stakeholders' support and intangible resources and the effectiveness of performance measurement. Lastly, I look at Organizational Learning theory as the support theory for the importance of technical training to the managerial effectiveness of performance measurement.

2.1. Performance

Performance is a commonly used term in a broad scope of activities and organizations. Lebas and Euske (2007:126) provide a table of nine possible meanings of performance:

"*1. measurable by either a number or an expression that allows communication (e.g. performance in management is a multi-person concept);*
2. to accomplish something with a specific intention (e.g. create value);
3. the result of an action (the value created, however measured);
4. the ability to accomplish or the potential for creating a result (e.g. customer satisfaction, seen as a measure of the potential of the organization for future sales);
5. the comparison of a result with some benchmark or reference selected or imposed, either internally or externally;
6. a surprising result compared to expectations;
7. acting out, in psychology;
8. a show, in the "performing arts", that includes both the acting or actions and the result of the actions as well the observation of the performers by outsiders;
9. a judgment by comparison."

Performance is not easy to define. The more I read the literature about business performance, the more I understand that there is no consensus on its definition. Performance covers all the functional areas of a firm and therefore it is treated differently by researchers from distinct functional backgrounds such as marketing, human resources, finance and operations, for example (Neely, 2007). Another point for discussion is that there are multiple adequate units of analysis for performance measurement: the corporate level of the firm, the division, the cost center, the activity (Meyer, 2007).

However, a significant part of the literature agrees on some points such as the business performance definition. It is consensual that the performance level of a firm is a function of the efficiency (i.e. the economic utilization of its resources) and the effectiveness (i.e. level of achievement of their goals and objectives) of their activities. It was suggested that performance means the efficiency and effectiveness of past actions (Neely, Gregory and Platts, 1995); a performance indicator is a metric used to quantify the efficiency and/or the effectiveness of an action; and a performance measurement system is a metric system used to quantify the efficiency and/or the effectiveness of past actions by means of

collection, analysis, study and deployment of information in order to take the right decisions that will foster action in order to improve future firm performance (Neely, 1998).

In the context of public administration, performance measurement can be defined as the utilization of quantitative indicators to periodically measure the results and efficiency of public programs that citizens, customers, or stakeholders expect (Broom et al., 1998; Hatry 1999).

As such, and for the purposes of this research, I adopt Lebas and Euske's proposition that defines performance as "*the sum of all the processes that will lead managers to taking appropriate actions in the present that will create a performing organization in the future (i.e. one that is effective and efficient)*" (Lebas and Euske 2007: 127).

Much work has been done about what type of measures should be used to measure performance, whether financial and/or non-financial measurements (Eccles, 1991; Kaplan and Norton, 1992). Financial measures have predominated and it is true that they are still preferred by the analysts on the stock markets (i.e. dividend yield, earnings per share, earnings growth, sales growth, return on equity), and thus the ones that CEO´s are always concerned about. Of course, financial measures are the end of the line and could be considered the results of the preceding activities. But financial measures are about past performance not about the potential for future performance unlike non financial measures, i.e. market share, customer satisfaction levels, customer retention or loyalty, customer service levels (e.g. defect rates, response time, deliveries on time) or employee satisfaction.

As a result of the knowledge I gleaned from working in performance improvement projects in firms and public administration, I agree that the above definition is valid for both private and public organizations and that financial and non financial metrics should be used when measuring performance. Indeed, SIADAP uses the concepts of effectiveness and efficiency as parameters for setting and evaluating goals in organizational units in municipalities.

2.2. Performance measurement and public administration

Performance measurement in public administration has become an essential part of the reform programs in governments, driven by increasing pressure from elected officials and citizens who demand higher levels of accountability, responsiveness, and quality (Barzelay, 2001; Kettl, 2005; Moynihan, 2006).

Public Administrations in developed countries have been subject to pressure since the 1970´s to increase their effectiveness and efficiency, to reduce the cost burden for taxpayers whilst simultaneously improving the quality of service and customer satisfaction levels. An evolution from the bureaucratic system of administration which did not care about customer satisfaction, and against the "*public officials who were inefficient and ineffective, and who were more concerned with their own needs than those of their service users*" (Osborne and McLaughlin, 2002:8).

This has led to changes in the way Public Administrations are managed. In the United States, MBO – Management by Objectives - was introduced in local government in the early 1970´s and in a number of federal agencies in 1974, following an initiative of President Richard Nixon (Jun, 1976).

Several reforms have since been made in North American countries (USA and Canada) Australasia (Australia, New Zealand) and Western European Countries like the UK, The Netherlands, Germany, and Switzerland (McLaughlin, Osborne and Ferlie, 2008). One of the dominant paradigms for these reforms is best known by the term NPM – New Public Management.

The source for NPM was a seminal paper based on the UK experience (Hood 1991). The classic NPM formulation (Osborne and McLaughlin, 2002:9) "*comprised seven doctrines:*

- *Hands-on and entrepreneurial management as opposed to the traditional bureaucratic focus of the public administrator;*
- *Explicit standards and measures of performance;*
- *An emphasis on output controls;*

- *The importance of disaggregation and decentralization of public services;*
- *A shift to the promotion of competition in the provision of public services;*
- *A stress on private sector styles of management and their superiority;*
- *The promotion of discipline and parsimony in resource allocation*."

The improvements that several management tools used by the private sector could bring when used in the public sector organizations were implicit in these doctrines.

Although not written by academics, another contribution to the NPM paradigm was the best-seller "Reinventing Government" (Osborne and Gaebler, 1993) whose doctrines were expressed as slogans, such as "*funding outcomes, not inputs*" in chapter 5 - "Results-Oriented Government" or "*meeting the needs of the customer, not the bureaucracy*" in chapter 6 - "Customer-driven government". This book influenced the priorities in the US Federal Government during the first Clinton Administration (Barzelay 2002).

Some authors consider the New Zealand reforms in the 1980s part of the intellectual foundations for the NPM. The Treasury's public management reform in New Zealand, called the New Institutional Economics (NIE), had three key theoretical components: public choice theory, transactions-cost economics and the economic theory of agency (Boston 1991). Based on these principles the "contractualist model" was developed suggesting that the ministers were purchasers of outputs provided by government departments (Schick 1996).

2.3. The managerial effectiveness of performance measurement

In the last decades there has been great interest in using performance measurement to improve performance (Ammons, 1996; Greiner, 1996; Harris, 1995; Holzer, 1998; Keehley et al., 1997; Walters, 1998).

Performance measurement is not an end in itself, but is intended as a means to obtain more informed and better decisions (Julnes and Holzer, 2001). The question is: why measure performance in public administration? Other than the fact that it is mandatory in Portugal for municipalities to measure their performance in terms of effectiveness,

efficiency and quality of services provided to citizens, what other explanations are there for it? Are there pertinent goals for measuring performance besides complying with the law?

Behn (2003:588) offers an answer by giving eight managerial purposes that public managers may have to measure performance:

1. *Evaluate: How well is my public agency performing?*
2. *Control: How can I ensure that my subordinates are doing the right thing?*
3. *Budget: On what programs, people, or projects should my agency spend the public's money?*
4. *Motivate: How can I motivate line staff, middle managers, non profit and for-profit collaborators, stakeholders, and citizens to do the things necessary to improve performance?*
5. *Promote: How can I convince political superiors, legislators, stakeholders, journalists, and citizens that my agency is doing a good job?*
6. *Celebrate: What accomplishments are worthy of the important organizational ritual of celebrating success?*
7. *Learn: Why is what working or not working?*
8. *Improve: What exactly should who do differently to improve performance?*

Another question is: how can we *improve* performance? In order to improve performance public organizations would benefit from implementing performance measurement systems, but that can be a difficult challenge. Having such a system in place does not guarantee that performance will improve or that any of the other eight purposes defined by Behn (2003) will be achieved.

And that brings us to the concept of managerial effectiveness of performance measurement. Managerial effectiveness could be defined as the effects that performance measurement can have on managerial variables such as staff evaluation, priority setting, cost-efficiency and strategic planning (Behn 2003; Berman and Wang 2000; Poister and Streib 1999, Yang and Hsieh, 2007).

My research intends to identify the perceived main determinants of effective performance measurement by means of the literature review and using my experience in various

projects implementing performance measurement. The three main constructs identified are described in the next sections.

2.4. Stakeholders' support

The definition of stakeholders proposed by Freeman (1984:5) is: " *any group or individual that is affected or can affect the achievement of an organization's objectives*". According to this definition a large group of people either internal or external to the firm would be stakeholders. Later, Freeman (2002:39) proposed a new, more precise definition: "*Stakeholders are those groups who have a stake in or claim in a firm. Specifically I include suppliers, customers, employees, stockholders and the local community, as well as management in its role as agent for these groups*". This definition is also applicable in a public sector organization, although the "stockholders" are not the same as in a private corporation. I can argue that "stockholders" in a public organization are the citizens. One point of interest for this research is that Stakeholder theory does not imply that all stakeholders should be involved in all processes or decisions (Donaldson, 1995). This is also valid in public administration.

The various types of a municipality's stakeholders could include the following: the internal stakeholders e.g. elected officials, managers, middle managers, personnel, and the external stakeholders, e.g. customers, citizens. Some authors consider elected officials as external stakeholders (Yang and Hsieh 2007) because they do not have a direct managerial role in some cases. For the purposes of this thesis, I will consider that elected officials are internal stakeholders, together with managers and employees, because they are also involved in the process of performance measurement either directly as participants or indirectly through its effects. Elected officials are viewed as important consumers and stakeholders of performance measurement (Ho, 2006). Berman and Wang (2000:409) refer that "*Support from elected officials is often important in innovation, and it is especially crucial to performance measurement because it is, in part, undertaken to provide elected officials with improved information*". On the other hand, if elected officials perceive that the effects of performance measurement can cause them problems in elections, for example due to dissatisfaction of workers with their individual evaluations, they might tend to give the system less support. I was confronted with this lack of support in one of the performance measurement projects I was involved in.

The political and the management dimensions could sometimes be conflicting on what concerns elected officials, and as they consider themselves above all as politicians this dimension normally prevails in their decisions.

In municipalities elected officials are often, simultaneously, the first level managers. Their support is therefore critical because it legitimates reforms and new performance expectations, and helps ensure funding for new efforts. It has been recognized that the uncertainty of support from elected officials is an obstacle to the success of performance measurement (Berman and Wang, 2000).

When top management are strongly committed to introducing performance measurement, it appears to produce larger effects on productivity (Argyris, 1973; Hollmann, 1976; Ivancevich et al. 1976). Strong support and active participation from top management when implementing performance measurement, produces better results in productivity, when compared with situations of low commitment or no participation (Rodgers and Hunter, 1991).

My own professional experience confirms that without top management commitment and support, performance measurement initiatives are doomed to failure. I have been called as a consultant to help implement performance measurement systems in municipalities where it had previously failed. In all cases, elected officials gave the process no real support.

The best form of support from elected officials is their participation in performance measurement from the outset, starting with the definition of goals and objectives at the strategic level because it improves the conditions for the performance measurement and for the following use of performance information (Berman and Wang, 2000; Ho, 2006; Melkers and Willoughby, 2005; Yang and Hsieh, 2007; Wang and Berman, 2000). Junes and Holzer (2001:702) confirmed: "*Our empirical findings also support the view that continued success of performance measurement depends on the continued support of elected officials*".

Support and participation from managers in municipalities is probably hard to assess and measure as noted previously by Ammons (1995:41): "*detailed investigation often casts*

doubt on the number of such systems being claimed and on rhetoric declaring dedication to the performance measurement enterprise". My professional experience has consistently confirmed the importance of managers' support and participation in the performance measurement effort. However, sometimes support is stated, but does not exist in reality.

Involving internal stakeholders, such as managers and staff in the performance measurement efforts can lead to a greater understanding of the reasons for undertaking the effort and the frequently unduly feared consequences (Julnes and Holzer 2001), thus increasing their support for the process.

Employee participation and support is also a factor that influences the quality of the results of performance measurement. In order to be effective, performance measurement systems should meet standards of validity, functionality, and legitimacy. The principle underlying the legitimacy concept is that effective measures cannot be forced from the top of the organization down. Measures must be previously understood and accepted by subordinate level employees (Bouckaert, 1993). The Portuguese law on implementing performance measurement in public administration follows this legitimacy concept stating that, on setting objectives, the negotiation between manager and employee is the rule and the manager can only impose the objectives on the employee in case of disagreement. This is a good strategy to increase employees' commitment and support.

Internal stakeholders' support should be the starting point for effective performance measurement, but it is not the only determinant. The appropriate resources are also required to support the process. Intangible resources are the most relevant of these.

2.5. Intangible resources

Several studies have been conducted in the field of strategic management on the reasons a firm acquires and sustains competitive advantages and superior performance. The Resource Based View (RBV) is one of the theories that seek to explain why some companies perform better than others.

RBV analyzes the firm from the resources perspective. "…*firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge,*

etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" Barney (1991:101).

Resources are anything that can be considered a strength or weakness of a firm (Wernerfelt, 1984). Resources can be any tangible possessions like land, machinery or capital, or intangible possessions like brand names, patents, in-house knowledge of technology, skilled personnel, trade contacts and efficient procedures (Wernerfelt, 1984).

Firms are thought of as having different sets of resources which will remain heterogeneous over time and whose characteristics of value, rareness, imitability and substitutability, will allow the implementation of unique strategies that will achieve sustained competitive advantage (Barney, 1991).

"*What a firm wants is to create a situation where its own resource position directly or indirectly makes it more difficult for others to catch up*" (Wernerflet, 1984:173).

Resources allow a competitive advantage to be sustained in order to obtain a better performance.

Based on the resource based view, I can conclude that any organization that defines a strategy in order to improve its efficiency and effectiveness, be it a firm, government agency, municipality, not-for-profit organization or non-governmental organization, should consider their resources as the implementation potential of the chosen strategies.

In addition to resources, capabilities also allow the long-term strategy of firms to be implemented and consequently they are a primary source for the firm's profits (Grant, 1991). A capability is defined as the organizational capacities to deploy the resources (Amit and Schoemaker, 1993) or the organizational capacity that resources have to perform some task or activity (Grant, 1991).

Capabilities or "distinctive competencies" can also be found in functional areas: general management, financial management, marketing and selling, market research, product R&D, engineering, production, distribution, legal affairs, and personnel (Hrebiniak, 1980). "*McDonald's possesses outstanding functional capabilities within product development, market research, human resource management, financial control, and*

operations management. However, critical to McDonald's success is the integration of these functional capabilities to create McDonald's remarkable consistency of products and services in thousands of restaurants spread across most of the globe" (Grant, 1991:122).

Capabilities provide the foundations for a sustainable competitive advantage and stem from both tangible and intangible resources. Intangible resources cover a wide range of items from public knowledge such as scientific works, to contracts, trade secrets, intellectual rights of patents, trademarks, copyright and registered design and to resources that are people-dependent like know-how, networks; organizational culture, and the reputation of products and of the company (Hall, 1992).

The intangible resources of a company sometimes enable financial performance, more than tangible resources. The difference between the share value of a public company and its book value is an indication of that effect (Hall, 1992). For the purposes of this thesis, I use the concept of intangible resources based on Hall (1992), described above, which includes both capabilities and other intangible assets such as organizational culture and managers' and workers' know-how.

Performance measurement is a process that demands those involved to have specific knowledge about management concepts and tools such as the concepts of efficiency, effectiveness and performance measurement and the knowledge to understand, define and monitor objectives, key performance indicators and targets. This can only be guaranteed by adding management knowledge through technical training.

2.6. Technical training

Inadequate technical ability to collect and analyze performance data is one of the most important obstacles in the implementation of performance measurement (Radin, 1998; Theurer, 1998).

The knowledge or know-how question is ever present when we deal with implementing new processes which to some extent means changing the way people work. Changing

processes imply different ways of doing the work, acquiring new knowledge, learning the new competencies that are needed. That is the case of performance measurement.

Technical training becomes critical in procedures embedded in performance measurement such as the definition of objectives, the definition of output or outcome indicators, setting benchmarks, determining the frequency of control, defining indicators reporting and information feedback. Training is also needed if there are regulations to comply with, like quotas in personnel assessment (Berman and Wang, 2000; Fountain et al., 2003; Hatry, 1999; Liner et al., 2001; Newcomer et al., 2002).
Itami and Roehl (1987) have argued that a characteristic of all successful organizations is the recognition that there is a learning process which runs parallel to all operations, and that all activities present the potential to both enhance, or degrade, the know-how and reputation features of the intangible resources.

Technical knowledge about how to implement performance measurement is critical to its success (Weidner and Noss-Reavely, 1996; Wilkins, 1996). Technical knowledge can be acquired through training or access to adequate information on performance measurement (Julnes and Holzer, 2001).

Training provides managers with suitable information about the transition towards results-based management and therefore reduces uncertainty, fear, and cynicism (Reichers, Wanous, and Austin, 1997). Liner et al., (2001:78) state that "*On-the-job training is essential, but more formal training and occasional technical assistance usually are also needed to enable personnel to implement successful governing-for-results practices".* Technical training is a form of organizational learning.

2.6.1. Organizational Learning Theory

In a continuously changing environment, learning becomes critical. An organization's capacity to learn may be its main sustainable competitive advantage (De Geus, 1988; Stata, 1989).

Organizational learning means the process of improving actions through better knowledge and understanding (Fiol and Lyles, 1985). At its most basic definition, organizational learning is the development of new knowledge or insights that have the potential to influence behaviour (Slater and Narver, 1995). A learning organization is the one which learns powerfully and collectively and is continually transforming itself to better collect, manage, and use knowledge for success (Marquardt, 1996). They are organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspirations are set free and where people are continually learning how to learn together (Senge, 1990).

Organizational learning theory argues that that there is a relation between learning and performance "*as successful organizations are described as having capabilities for learning*" (Levinthal and March, 1993: 96). There is empirical evidence about the positive relationship between learning and business performance (Bontis et al., 2002), although some authors suggest that learning does not necessarily imply that those changes will directly improve performance because it is a process of change in cognition and behaviour, (Crossan et al., 1995).

Despite evidence that learning contributes to performance, the aim of this thesis is to research the impact of learning on performance under the effect of stakeholders' support and what impact intangible resources have on the conditions to develop the learning process. Organizational learning theory is used to support the development of the theoretical model.

The following table 2.1 includes the main studies used in the literature review. All are about performance and their determinants. They were instrumental in defining the above mentioned constructs. For example, the Galbreath and Galvin (2008) study was the source which gave rise to the definition of intangible resources presented by Hall (1992). The major source for this study came from Yang and Hsieh (2007). It was the base for the constructs of managerial effectiveness of performance measurement and technical training.

Table 2.1 – Main studies used in literature review

Study	Title	Setting	Dependent variable	Independent variables
Galbreath and Galvin (2008)	Firm factors, industry structure and performance variation: new empirical evidence to a classic debate	Manufacturing and services industries in Australia	Overall Performance	Tangible assets, Intangible assets , Capabilities, Industry Structure
Juntarung and Ussahawanitchakit (2008)	Knowledge management capability, market intelligence, and performance: an empirical investigation of electronics business in Thailand	Electronic business in Thailand	Performance	Knowledge Management Capability; Market Intelligence; Human Resource Value; Collaborative Firm; Organizational Support
Olavarrieta and Friedmann (2008)	Market orientation, knowledge-related resources and firm performance	Chilean sample of publicly traded firms	Firm Performance (FP); New Product Performance (NPP)	Market Orientation (MO);Knowlede-related capabilites (KRC) mediates between (MO) and (FP): Organizational Innovativeness , Market sensing capability , Imitation capability ; Brand Strength ; Firm Image
Rodríguez, Perez and Gutiérrez (2008)	Can a good organizational climate compensate for a lack of top management commitment to new product development?	Spanish innovative firms	New Product Performance	Interfunctional Climate measured by 4 variables: Trust, Internal Commitment, Communication and Cooperation; Moderating variables: Top Management Support, Top Management Risk Aversion
Yang and Hsieh (2007)	Managerial effectiveness of government performance measurement: testing a middle-range model	Government of Taipei (Taiwan) performance measurement specialists, senior managers and regular administrators	Managerial effectiveness of performance measurement	Supportive external politics, stakeholder participation, organizational support, technical training and performance measurement adoption
Ho (2006)	Accounting for the Value of Performance Measurement from the perspective of Midwestern Mayors	Mayors of Midwest cities in the USA	Impact of performance measurement	Political Environment ; Stakeholders´ Interest and Support; Process Changes ;Types of Performance Measures reported
Melkers and Willoughby (2005)	Models of Performance-Measurement Use in Local Governments: Understanding Budgeting, Communication and Lasting Effects	Administrators and budgeters in city and county governments in the USA	Budget, Communication, and Lasting Effects of Performance Measurement in Local Governments	Community characteristics, Respondent characteristics, Organizational culture, Performance-measuremet characteristics
Douglas and Judge Jr (2001)	Total Quality management implementation and competitive advantage	General medical hospitals in the USA	Organizational performance	TQM practices ; Organizational Structure; Control Variables: organization size, hospital ownership, market growth, level of competition
Julnes, P. and M. Holzer (2001)	Promoting the Utilization of Performance Measures in Public Organizations: An Empirical Study of Factors Affecting Adoption and Implementation	State and local government officials in the USA	Adoption and Implementation of performance measurement	Resources, Information, Goal Orientation, External requirements and Internal Requiremments; Internal interest groups, External Interest Groups, Unions, Risk taking and Attitudes
Berman and Wang (2000)	Performance measurement in U.S. Counties: Capacity for reform	National survey of counties with populations over 50,000, in the USA	Level of Use and Satisfaction with outcomes of performance measuremet in Counties	Technical capacity; Stakeholder capacity;
Ittner and Larcker (1997)	Product development cycle time and organizational performance	Data from two industries (automobile and computer) and four countries (Canada, Germany, Japan and USA)	Organizational performance	Product development cycle time; Moderated by Organizational Practices: Supressors (3); Enablers (5)

CHAPTER 3 – CONCEPTUAL FRAMEWORK AND HYPOTHESES

In this chapter I present the proposed conceptual model for the research and explain the theoretical arguments that support the research hypotheses that will be empirically tested. Based on the literature review, I present the relationships between the constructs: stakeholders' support, intangible resources, technical training and managerial effectiveness of performance measurement. Both the model and the hypotheses are theoretically driven. The research hypotheses are based on the resource-based view, the stakeholders and organizational learning theories and the performance measurement and business literatures.

This chapter has two sections: firstly I introduce the conceptual framework, and secondly I formulate the research hypotheses to be tested.

3.1. Conceptual framework

The increase in efficiency and effectiveness through performance measurement in public administration depends upon a set of conditions that are supported by theory and by the relevant literature (Berman and Wang; 2000; Ho, 2006; Melkers and Willoughby, 2005; Yang and Hsieh, 2007).

Stakeholder theory asserts that the achievement of an organization's objectives depends upon support from stakeholders (Freeman, 1984). Thus, the implementation of performance measurement as a means of increasing managerial effectiveness should be dependent upon the stakeholders' support. In addition to the direct relation between stakeholders' support and effectiveness of performance measurement, I propose two indirect relations between stakeholders' support and effectiveness of performance measurement based on stakeholder theory: one mediated by intangible resources and the other mediated by technical training.

The Resource-based view (RBV) seeks to explain why some organizations have a better performance than others based on the resources and capabilities employed (Wernerfelt, 1984; Barney, 1991). Efficiency and effectiveness are influenced by the resources and capabilities available in the organization (Barney 1991).

Thus, the implementation of performance measurement as a way of increasing efficiency and effectiveness should be directly determined by the available resources and capabilities. In this research I adopt Hall's (1992) concept of intangible resources, later developed by Fahy (2002) and adapted by Galbreath and Galvin (2008). That means that intangible resources will have a direct relationship with the managerial effectiveness of performance measurement. Based on RBV, I propose that intangible resources will also be indirectly related to managerial effectiveness of performance measurement, mediated by technical training.

The implementation of performance measurement in public organizations implies the development of new knowledge and practices aimed at changing behaviour in order to increase efficiency and effectiveness (Slater and Narver, 1995). Technical training is a lever to develop knowledge and thus increase learning in the organization. Organizational learning theory posits a relation between learning and performance (Levinthal and March, 1993). Thus, I use organizational learning theory to support the relation between technical training and the managerial effectiveness of performance measurement.

3.2. Research hypotheses

3.2.1. The influence of stakeholders´ support on the managerial effectiveness of performance measurement

In a management change process like that of implementing performance measurement, stakeholders' support becomes crucial (Berman and Wang, 2000; Ho, 2006; Melkers and Willoughby, 2005; Yang and Hsieh, 2007; Wang and Berman 2000). The change process encompasses different areas including the intangible resources available, which are directly dependent upon decisions made by top management, and the involvement of managers and employees. Thus, I posit:

H1: Stakeholder support is positively related to intangible resources

Technical training is vital for performance measurement because managers are familiar with input and process indicators but are less familiar with output and outcome measures (Fountain et al. 2003; Hatry 1999; Liner et al. 2001; Newcomer et al. 2002). Furthermore, employees are seldom familiar with input and process indicators. The level of technical training is dependent upon decisions taken by internal stakeholders namely elected

officials and managers Therefore I argue that the implementation of technical training is directly dependent on stakeholders' support. Thus, I posit:

H2: Stakeholder support is positively related to technical training

As performance measurement is a process developed by people from the definition of what will be measured to the definition of the indicators and up to the collection and analysis of data that will allow decisions to improve performance measurement, managerial effectiveness of performance measurement will be dependent upon stakeholders' involvement and support (Berman and Wang, 2000; Yang and Hsieh, 2007). Therefore, I posit:

H3: Stakeholder support is positively related to managerial effectiveness of performance measurement

3.2.2. The secondary source of managerial effectiveness of performance measurement

The implementation of performance measurement hardly ever requires tangible resources like equipment or machines, but always requires intangible resources such as the organization culture, people's skills (Hall, 2002), knowledge about information systems and organizational capabilities (Grant, 1996a; Grant, 1996b).

Based on Hall (2002) I argue that people's skills, organization culture and knowledge about information systems required for performance measurement are mediated through technical training. Thus, I hypothesize:

H4: Intangible resources is positively related to technical training

Intangible resources are directly linked to the performance of organizations (Wernerfelt 1984) through their direct impact on efficiency and effectiveness (Barney, 1991; Daft, 1983). The organizational structure is one example of the intangible resources that were found to have a direct influence on the managerial effectiveness of performance measurement due to the fact that it defines the roles and responsibilities of each elected official and manager. The current people skills and know-how also have a direct influence. Therefore I build on this to theorize the next hypothesis:

H5: Intangible resources is positively related to managerial effectiveness of performance measurement

The technical knowledge of how to implement performance measurement is critical to its success (Weidner and Noss-Reavely 1996; Wilkins 1996). It can be acquired through training or access to adequate information on performance measurement (Julnes and Holzer, 2001). Training provides managers with adequate information about the transition toward results-based management and therefore reduces uncertainty, fear, and cynicism (Reichers, Wanous, and Austin, 1997). The positive relationship between learning and business performance has been demonstrated in the literature (eg. Bontis et al., 2002). Thus, I hypothesize that:

H6: Technical training is positively related to managerial effectiveness of performance measurement

3.2.3. The mediating effects of intangible resources and technical training on the managerial effectiveness of performance measurement.

I proposed that: 1) Stakeholder theory and RBV suggest, respectively, that stakeholders' support and intangible resources both have a direct positive impact on the managerial effectiveness of performance measurement (H3 and H5) and, 2) organizational theory supports the effect of technical training on the managerial effectiveness of performance measurement (H6). Based on the previous hypotheses, I propose that intangible resources have a mediating effect between stakeholders' support and the managerial effectiveness of performance measurement and that technical training mediates the relation of both stakeholders' support and intangible resources with the managerial effectiveness of performance measurement. Thus, I posit:

H7: Intangible resources mediate the relationship between Stakeholders' support and the managerial effectiveness of performance measurement;

H8a): Technical training mediates the relationships between stakeholders' support and the managerial effectiveness of performance measurement;

H8b): Technical training mediates the relationship between Intangible resources and the managerial effectiveness of performance measurement.

3.2.4. The moderating effect of the type of respondent

Two types of respondent were asked to answer the survey: the elected officials and the managers in municipalities. This observed heterogeneity of respondents could have some effect over the relationships hypothesized in this research. I want to research this possibility by means of a multi-group analysis (Esposito Vinzi et al., 2008). Thus I posit:

H9: All model relationships are moderated by the type of respondents: elected officials and managers;

Table 3.1 – Summary of research hypotheses

Main effects
H1: Stakeholder support is positively related to intangible resources
H2: Stakeholder support is positively related to technical training
H3: Stakeholder support is positively related to managerial effectiveness of performance measurement
H4: Intangible resources is positively related to technical training
H5: Intangible resources is positively related to managerial effectiveness of performance measurement
H6: Technical training is positively related to managerial effectiveness of performance measurement
Mediating effects
H7: Intangible resources positively mediate the relationship between stakeholders' support and managerial effectiveness of performance measurement;
H8: Technical training positively mediates the relationships between:
a) Stakeholders' support and managerial effectiveness of performance measurement;
b) Intangible resources and managerial effectiveness of performance measurement
Moderating Effects
H9: All model relationships are moderated by the type of respondents: elected officials and managers.

The conceptual model, presented by figure 3.1., intends to explain the relative impact of stakeholders support, intangible resources and technical training on managerial effectiveness of performance measurement. I also present the proposed mediating effects in figure 3.2., and the path diagram of the proposed model in figure 3.3.

Figure 3.1 – Conceptual Model and hypotheses – Main effects

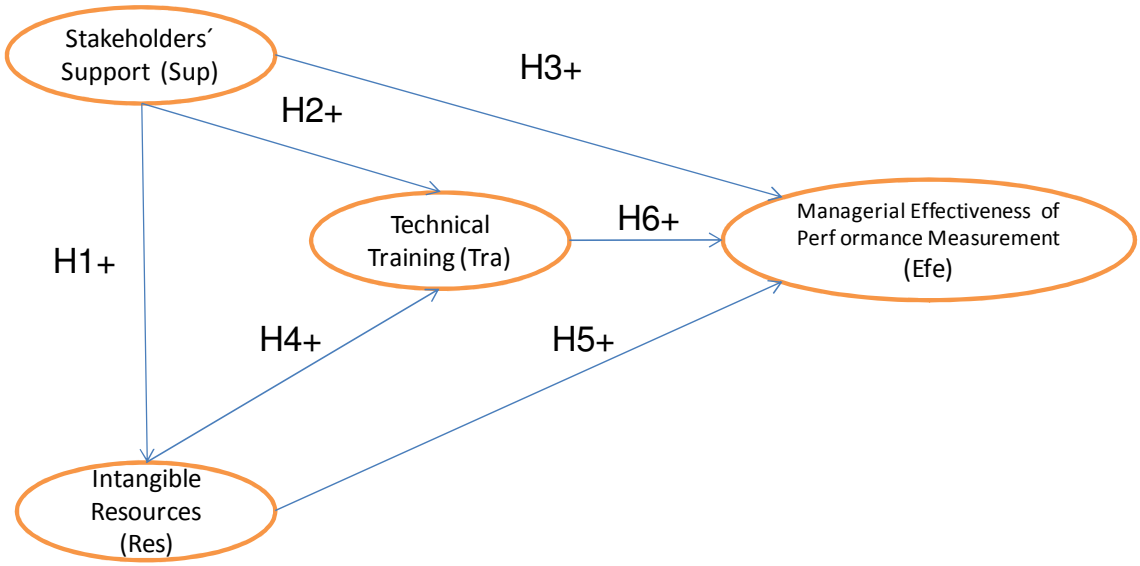
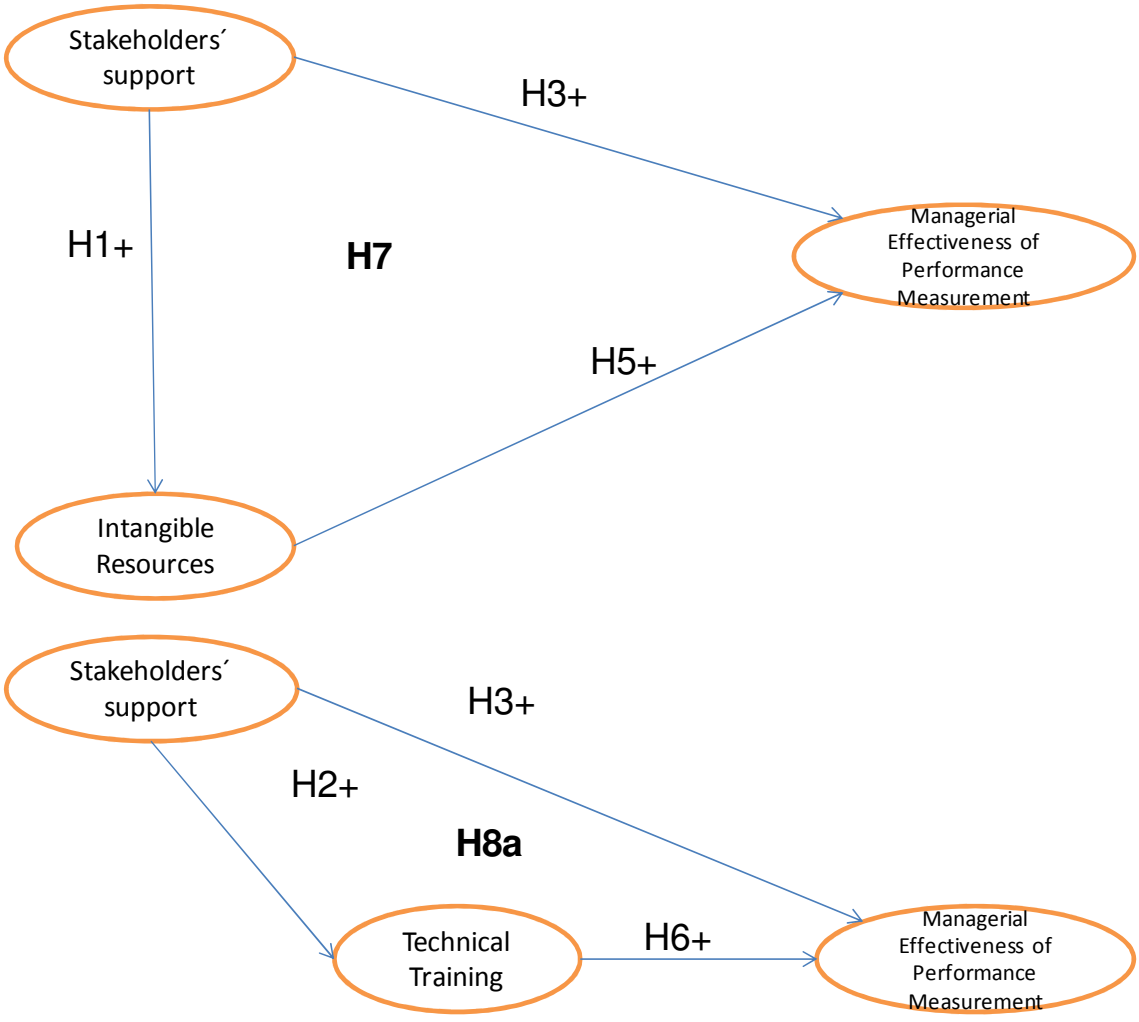


Figure 3.2 – Conceptual Model and hypotheses – Mediating effects



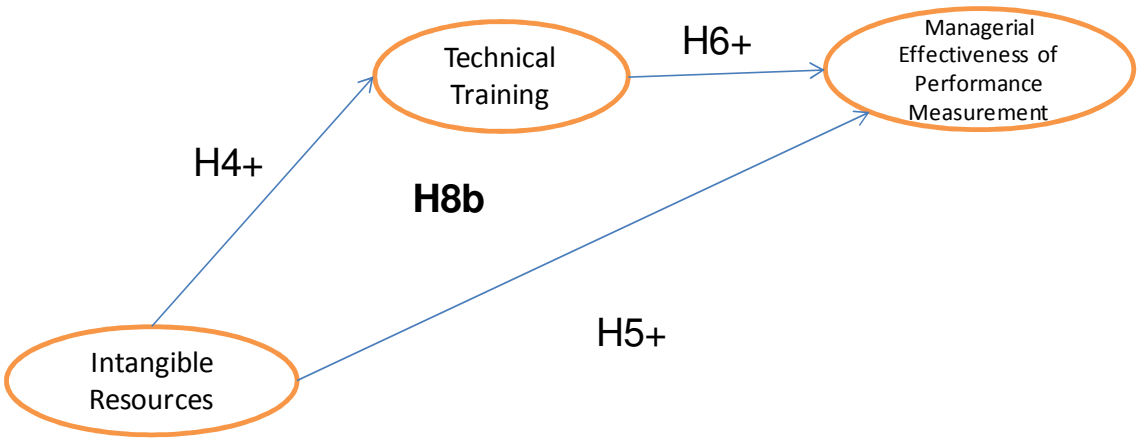
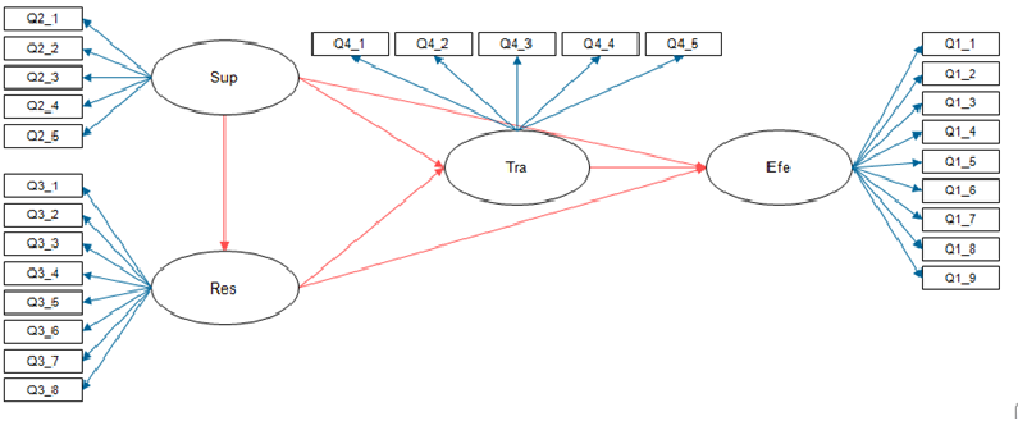


Figure 3.3 – Path diagram of the proposed model



Having proposed the research hypotheses and the proposed model the next chapter presents the research approach and context, the survey instrument and the measures used as well as the processes of data collection and data analysis that were performed to empirically test the hypotheses.

CHAPTER 4 – METHODOLOGY

In this chapter I explain the methodology used in the research. I describe and justify the adopted methodological options in the following sections: 1) research approach; 2) research context chosen; 3) primary research instruments development; 4) measures; 5) data collection; 6) data analysis and 7) conclusion.

4.1. Research approach

There are several possible philosophical stances regarding the methodology to choose to collect data and interpret social reality in order to answer the research questions.

The debate about the choice of quantitative or qualitative methods in research arises from the differences between the positivist philosophy that argues that in social sciences the position of the researcher would be the same as the physical scientist based solely on quantifiable data, given that the researcher is totally separated from the subjects observed, thus bringing objectivity to the inquiry. The interpretivist philosophy argues that in social sciences it is necessary to understand differences between people in their role as social actors (Saunders et al, 2007), arguing that the researcher needs to understand the point of view of their research subjects. The ontological position of subjectivism argues that "*social phenomena are created from the perceptions and consequent actions of social actors*" (Saunders et al, 2007:108).

Saunders et al. (2007) propose a set of possible of possible epistemological, ontological and research approaches positions depicted in table 4.1.

Table 4.1. – Research philosophies and approaches

Epistemology	Ontology	Research approaches
Positivism	Objectivism	Deduction
Realism	Pragmatism	Induction
Interpretivism	Subjectivism	

Source: Saunders et al (2007)

The pragmatic position argues that the most important determinant of the research methods adopted stems from the research questions. If the research questions do not point

clearly towards a positivist or an interpretivist philosophy, then mixed methods, quantitative and qualitative, are possible. This is in line with Guba and Lincoln (1994:105) who state: "*both qualitative and quantitative methods may be used appropriately with any research paradigm. Questions of method are secondary to questions of paradigm, which we define as the basic belief system or world view that guides the investigation, not only in choices of method but in ontologically and epistemologically fundamental ways.*"

Concerning the research approaches, this thesis will start by using an inductive approach to analyze the perceptions of experts in the field of performance measurement in municipalities in order to improve the operationalization of the latent variables. It will then use a deductive approach when testing theory by means of building on extant theory and research (Saunders et al, 2007).

Following a pragmatic perspective, the research uses mixed methods. I use qualitative methods and an inductive approach in the preliminary in-depth interviews in order to refine the theoretical framework and adjust to the reality I will study. Quantitative methods and a deductive approach will be used by means of a survey to test the hypotheses and to validate the conceptual model.

4.2. Research context: Portuguese Municipalities

Portugal has 308 municipalities distributed across the Continental region of the country and two autonomous regions: Azores and Madeira. In terms of dimension, municipalities have been characterized as having three population sizes: "Large", "Medium" and "Small" (Carvalho et al., 2009). "Large" - total population of more than 100,000 inhabitants, "Medium" - more than 20,000 inhabitants and less or equal to 100,000 inhabitants, and "Small" – 20,000 inhabitants or less.

Table 4.2 – Types of Municipality

Size	Frequency	Population	Percentage of municipalities	Percentage of population
Large	23	4,454,757	7%	42%
Medium	104	4,516,486	34%	42%
Small	181	1,666,477	59%	16%
Total	**308**	**10,637,720**		

Source: Carvalho et al., (2009)

Table 4.2 presents this typology. The "Large" municipalities represent 42% of the total population although representing only 7% of the total municipalities. In contrast, "Small" municipalities are 59% of the total municipalities but only represent 16% of the total population.

4.3. Development of primary research instruments

A questionnaire survey was developed by combining information derived from the literature and from in-depth interviews with a group of ten specialists in performance measurement in municipalities, seven of whom are managers in municipalities, and the other three are management consultants with extensive experience of supporting the implementation of performance measurement processes in municipalities.

4.3.1. Unit of analysis

Data was collected at the elected officials and managers level that is at the municipality level with respect to their management level. Other studies on performance measurement on local administration consider other units of analysis, for example counties (Berman and Wang, 2000) or a large Municipality (Yang and Hsieh, 2007). The main reasons for the choice of municipalities were the research problem, my previous experience in management consulting in municipalities and the desire to identify possible variations across different types of Municipality.

The scales, originally in English, were selected from the literature and were translated to Portuguese by a skilled translator and translated back into English by another experienced translator in order to verify the original word meaning for consistency (Van de Vijver and Leung, 1997).

An interview guide and the conceptual framework (Appendix 1) were presented in face-to-face, in-depth interviews which took place between August and September 2009. The conceptual model was explained in the first part of the interview. The manifest and characterization variables were then analyzed to obtain feedback on their importance, the way they were presented and to identify if any relevant variables were missing.

The interviews strived to verify the pertinence of the conceptual framework. Insights were collected on the relevance of the manifest variables, that the survey questions were understandable, on which of the possible respondents to the survey were the most relevant: elected officials, managers, skilled technicians or workers, and evaluated the respondent's level of knowledge to answer the questions. The interviews lasted between one and two hours, and were recorded and later transcribed for analysis.

As a result of the interviews three more items were considered, one manifest variable concerning the availability of information systems to support performance measurement was added to the construct intangible resources and two manifest variables concerning technical training of elected officials and workers were added to the construct technical training. This was due to the fact that the majority of the interviewees considered they were very important in the context of the research.

4.3.2. Questionnaire pre-test

In October 2009 a pre-test with a written questionnaire (Appendix 2) was conducted at the annual meeting of ATAM (*Associação dos Técnicos Administrativos Municipais*), an association for professionals working in municipalities. More than 500 people from all around the country attended the meeting, including elected officials, managers, skilled technicians and administrative workers. Respondents were given two incentives to complete the questionnaire: a GPS machine and a voucher for a stay in a hotel that would be distributed to participants by means of a draw. The result did not meet my expectations because only 34 questionnaires were completed.

Decisions were taken on the basis of the pre-test results: 1) due to the fact that several questionnaires from other types of respondents presented high levels of missing values due to their lack of knowledge or the necessary information to fill in the questionnaire it was decided that it would be presented only to elected officials and managers ; 2) the open questions were eliminated as hardly any respondents had anything to suggest; 3) the Likert scales on constructs were all formatted in a common range from one to seven; 4) a "Do not know / Not applicable" column was added for each question.

The final questionnaire (Appendix 3) was the result of these previous steps which allowed us to improve the quality of the initial version.

4.4. Measures

The constructs were measured using measurement scales consisting of multiple survey items for each construct. The scales were retrieved from the literature and adapted to the research context.

Likert type scales with a seven point rating were used in all the survey items, with an additional possible answer on constructs items, concerning possible lack of knowledge ("do not know") or non applicability ("not applicable").

My analysis relies on the respondent's personal perceptions of the situation in the municipality. With regard on perceptual data Yang and Hsieh (2007:865) state: "*previous studies have suggested that such data can provide valid indicators of organizational properties and remain a viable measurement strategy"*. On the other hand, more objective data e.g. financial measures, are sometimes more problematic than subjective assessments as the former could be biased and pulled away from the purpose they were made for (Lisboa, 2010). Examples of this are common in national governments like Greece, regional governments like Madeira, and some municipalities as per my own experience.

The following paragraphs present the source of the latent variables and the manifest variables, and the scales used to measure them, based on the literature review.

Stakeholders' support. I adapted the stakeholder support construct from Barman and Wang (2000). I adopted an internal view of performance measurement and this explains why I did not consider the external items "*citizen advocates*" and "*citizen advisory boards*" (Berman and Wang, 2000:413). Thus, in this research only internal stakeholder perceptions were asked. I asked the respondents to state their level of agreement on a scale from 1 (strongly disagree) to 7 (strongly agree) with the statements about the support different internal stakeholders give to the utilization of performance measurement.

Intangible resources. I adapted the intangible assets and capabilities constructs from Galbreath and Galvin (2008) originally based on Hall (2002) in order to assess the effect

that each of the resources has on performance measurement. In a scale from 1 (none) to 7 (total), I asked the respondents to state their perception of the impact that each of the intangible resources has on performance measurement in the municipality.

Technical training. Adapted from Yang and Hsieh (2007). Technical training on performance measurement for elected officials and workers were added to the original scale. This not only reflects my field experience of the importance of different levels and subjects of performance measurement training for elected officials and workers, but also the concerns raised by the interviewees in the pre-test field interviews. I asked respondents to state their perception about the level of technical training on performance measurement, from 1 (no training) to 7 (complete training), received by different types of people in the municipality.

Managerial effectiveness of performance measurement. I adapted the construct from Yang and Hsieh (2007). On a scale from 1 (strongly disagree) to 7 (strongly agree), the respondents were asked to rate their level of agreement with statements on the usefulness of performance measurement in the municipality. The variables reflect important aspects of performance measurement: quality of the indicators - variables Q1_4, Q1_5, Q1_6 and Q1_9; utilization of performance measurement results – variables Q1_1, Q1_2 and Q1_3; performance measurement effects – variables Q7 and Q1_8

Table 4.3 presents the constructs or latent variables, the indicators or manifest variables by which they are measured, the scales used and the literature source of each construct.

Table 4.3 – Constructs, items, scales and sources

Constructs, items and scales	Adapted from
Stakeholder support (label: Sup)	**Berman and Wang (2000)**
Q21 Elected officials support the use of performance measurement	
Q22 Most managers support the use of performance measurement	
Q23 Most supervisors support the use of performance measurement	
Q24 Most employees support the use of performance measurement	
Q25 Performance measurement motivates employees	
Q26 Performance measurement stimulates organizational learning	
Support level - Scale: 1 (strongly agree)….7 (strongly disagree)	
Intangible resources (label: Res)	**Galbreath and Galvin (2008)**
Q31 The organizational structure (i.e., the operating and reporting structure) of the Municipality	
Q32 The Municipality culture (i.e., values, beliefs, attitudes, and behaviors)	
Q33 The municipal policies designed to obtain the best human resources e.g., recruitment, compensation, reward, training)	
Q34 Relationships that employees and managers have established and maintained with external constituents (e.g., customers, strategic alliances, suppliers) for the benefit of the Municipality	
Q35 The skills of workers	
Q36 The skills of managers	
Q37 The skills of supervisors	
Q38 The skills on information systems to support performance measurement	
Effect level - Scale: 1 (none)….7 (total)	
Technical training (label: Tra)	**Yang and Hsieh (2007)**
Q41 How much technical training has been provided for performance measurement staff	
Q42 How much technical training has been provided for managers	
Q43 How much technical training has been provided for supervisors	
Q44 How much technical training has been provided for workers	
Q45How much technical training has been provided for elected officials	
Quantity - Scale: 1 (no training)….7 (complete training)	
Managerial effectiveness of performance measurement (label: Efe)	**Yang and Hsieh (2007)**
Q11 The Municipality's performance measurement can help managers make better decisions	
Q12 The Municipality's performance measurement helps communicate more effectively with elected officials	
Q13 The Municipality's performance measurement helps budget planning and decision making	
Q14 The Municipality's performance indicators accurately reflect the quality of management	
Q15 The Municipality´s performance indicators accurately reflect the quality of supervisors	
Q16 The Municipality's performance indicators are reliable	
Q17 The Municipality's investment in performance measurement is worthwhile	
Q18 The Municipality's performance measurement improves productivity	
Q19 The Municipality's performance measurement results can be trusted	
Benefits- Scale: 1 (strongly agree)….7 (strongly disagree)	

As mentioned previously, I used a group of variables to assess possible differences between respondents due to their own personal characteristics as well as the municipality to which they belonged. They are depicted in table 4.4.

Table 4.4 – Characterization variables

Variable	**Type**	**Categories** (Appendix 3)
Respondent information		
Q51 Age	Ordinal	5 categories: <30 years, to >60 years
Q52 Sex	Nominal	Male or female
Q53 Education	Ordinal	5 categories: basic education to PhD
Q54 Role	Nominal	6 categories
Q55Years in role	Ordinal	5 categories: <5 years, to >35 years
Q58 Training in public management	Nominal	Yes or no
Q59 What is your opinion about the model of SIADAP used in municipalities	Ordinal	7 categories: from 1 (totally negative) to 7 (totally positive)
Municipality information		
Q56 Size (by number of employees)	Ordinal	5 categories: <200 employees, to >1200 employees
Q57 Experience with performance measurement (number of years of SIADAP implementation)	Ordinal	5 categories: from 0 to 4 years

4.5. Data collection procedures

4.5.1. Sampling procedure and survey administration

I tested the hypotheses using a sample of 175 Municipalities in Portugal. The basic assumption on selecting this group from the 308 Municipalities that Portugal has, was that they had had previous experience with SIADAP; this is a performance measurement system which municipalities have been legally required to use since 2006.

However, at the start of my field work, I found that only 171 municipalities had had experience of SIADAP according to information from DGAL (*Direção-Geral das Autarquias Locais*), the government agency responsible for controlling local administration. A further 4 municipalities that had meanwhile acquired experience of SIADAP were later added. This group of Municipalities compares well with the total Municipalities in terms of size and population, as we can see in table 4.5., below.

Table 4.5 – Municipalities sample and total Portugal

Size	Number Municipalities	Population	% Municipalities	% Population
Small	91	805,404	52%	11%
Medium	66	3,097,172	38%	43%
Large	18	3,373,470	10%	46%
Total	**175**	**7,276,046**		

Size	Number Municipalities	Population	% Municipalities	% Population
Small	181	1,666,477	59%	16%
Medium	104	4,516,486	34%	42%
Large	23	4,454,757	7%	42%
Total	**308**	**10,637,720**		

Source: adapted from Carvalho et al. (2009)

In table 4.5., the "Small" municipalities are the biggest group in terms of number of participants, and the smallest in terms of total population in both the total municipalities and in the sample. The "Large" municipalities are the smallest group in terms of number of municipalities, and "Large" and "Medium" are very close in terms of total population in both the total 308 municipalities and in the sample of 175 municipalities.

I collected information from the initial database about the Municipalities included in the sample. I decided to question only elected officials and managers (see point 4.3.3) because respondents would need extensive knowledge about the municipalities to answer the questionnaire.

After collecting information, on the Internet, I gathered a database of 237 elected officials (mayor and aldermen). An e-mail invitation was sent asking for their participation (Appendix 4) to which I received 63 answers, a response rate of 26.6%.

I then asked the mayors who had answered the survey to supply a list with name, role and e-mail of managers working in their municipality in order to answer the survey. A database of 202 managers was obtained. Using the same procedure as with elected officials, I obtained 89 answers, a response rate of 44.1%.

The database of elected officials and managers had 439 possible respondents. obtained 152 fully answered questionnaires were obtained, which is equivalent to a response rate of 34.6%. After the procedures for missing data analysis and data cleaning, 138 questionnaires remained.

As we can see in table 4.6, I had responses from a total of 52 different municipalities which corresponds to a response rate of 29.7%, considering the starting point of 175

municipalities. We had 22 municipalities (42% of total) with one response, 12 municipalities with 2 responses, 10 municipalities with 3 to 5 responses, and 8 municipalities with more than 5 responses. In total, 58% of the Municipalities gave 2 or more responses. The final distribution table for the 52 Municipalities is presented in table 4.6. I can conclude that its distribution by type of Municipalities and population it is similar to the initial database of 175 municipalities presented on table 4.5 above.

Table 4.6 – Number of Municipalities with responses

Size	Number Municipalities sampled	Population	% Municipalities sampled	% Population
Small	26	276,388	50%	13%
Medium	20	931,621	38%	44%
Large	6	921,703	12%	43%
Total	**52**	**2,129,712**		

Source: adapted from Carvalho et al. (2009)

4.5.2. Data cleaning

To analyze raw data I followed the steps defined in Hair et al. (1998). Missing values were checked and defined procedures for data replacement.

I analyzed the missing data which I attribute in most cases to the fact that the respondent had no opinion or did not have sufficient knowledge (i.e. technical training) to answer the questions honestly. An option (NS/NR) was present for those cases in the online questionnaire. Answers with that option were considered as missing values.

The missing data was concentrated in the items related to the latent variable technical training. Of the total of 82 questions (or 1.93% of total = number of questions x number of respondents) not answered, 43 or 52% of the total were on those items. I decided to delete every case where the percentage of missing values was higher than 10% of the questions. Fourteen cases were deleted and the total number of missing values reduced from 82 to 18, representing 0.42% of the total answers.

After deleting, only 6 out of the 28 variables showed missing values. The variable Q4_1 had the highest weight of missing values with a total of 9 missing values, 6.5% or nine out of 138 cases.

The remaining 18 missing values were replaced by the mean, one of the most used methods to replace missing values (Hair et al. 1998).

4.5.3. Non response bias

Non response bias was tested with the procedure suggested by Armstrong and Overton (1977), comparing early and late respondents, based on the assumption that late respondents are more likely to be similar to non respondents. Late respondents were considered as the last 25 percent of respondents who returned questionnaires, and they are representative of the Municipalities that did not respond to the questionnaire. Comparisons of differences between the two groups in terms of mean (t-test) at the $\alpha<0.05$ level and variances (Levene test) at $\alpha<0.05$ confirmed that there were no significant differences in terms of the variables municipality size, sex, education and role performed by the respondents.

These results together with the relatively high response rate allow us to conclude that non response bias was not a major issue in this research.

4.5.4. Common method bias

This research could potentially have problems with common method bias, one of the major sources of measurement error, as data about items on independent and dependent variables were both collected from the same respondents. I followed several recommendations suggested by Podsakoff et al (2003) to minimize this effect.

First, I assured the respondents in the introduction to the on-line survey that their answers were anonymous, there were no correct answers and only their personal and honest opinion was important.

Second, the conceptual model was not explained in the questionnaire and I counterbalanced the order of the questions by placing the items related to the final dependent variable in the first section. I also carefully constructed the items by making the questions simple and concise, avoiding complicated syntax, and using more familiar terms. Although the four scales used were Likert type, with one to seven possible answers, only two of them had exactly the same semantic positions.

Finally, I used the Harman single-factor test to control for the common method bias as proposed by Podsakoff et al (2003). I included all model variables in a single exploratory factor analysis. Four factors were extracted with eigenvalues bigger than 1.0 but none of these explained the majority of the variance. The results of this test suggest that common method bias is not a significant issue in the study (Appendix 6).

4.6. Data analysis

The respondents' answers were given using an online questionnaire survey, and were automatically exported to an excel worksheet. Data cleaning and preliminary data analysis were made with IBM SPSS Statistics version 19 software (SPSS, 2010).

4.6.1. PLS Path Modeling (PLS-PM)

I tested the conceptual model and hypotheses using partial least squares path modeling (PLS-PM) with XLSTAT (2011) software, module XLSTAT-PLSPM.

PLS-PM is considered a structural equations modeling (SEM) approach. Within the SEM approach the most known is represented by LISREL model (2008) a covariance-based approach. PLS-PM accounts only for the variances of variables (Chin, 2010). PLS-PM makes no distributional assumption in its calculations for estimating parameters (Chin 2010). PLS-PM has been used in studies in different disciplines for various reasons (Henseler et al., 2009). PLS-PM does not make distributional assumptions and it is recommended for use in studies where the size of samples is small (Henseler et al., 2009). The above mentioned two reasons explain why I selected PLS-PM for this research.

Barclay et. al (1995) suggest the rule of thumb of a sample size at least ten times larger than the number of structural paths pointing to the latent variable in the structural model that has the bigger number of structural paths directed to it. Accordingly, ten times three, i.e. thirty, is well below the dimension of the sample, which has 138 valid observations after deleting cases due to missing values.

Several authors suggest a two-step approach to assess PLS-PM results: first, the assessment of the measurement model and, second, the assessment of the structural model (Chin, 2010; Henseler et al, 2009). We provide an additional measure to assess the overall prediction performance of the model, the relative GoF – Goodness of fit (Chin 2010; Tenenhaus et al. 2005) for greater rigor.

I would like to stress the fact that I chose PLS-PM for the two above-mentioned reasons: 1. sample size and, 2. the fact that the manifest variables distributions are not normal. Furthermore, PLS-PM is more oriented to prediction, whereas covariance-based methods, such as LISREL are more oriented to optimizing the model fit. As a practitioner, I prefer options that can bring more value into the organizations by using models that can help anticipate the future.

4.6.2. PLS-PM reflective measurement model assessment

I will use several criteria to assess the conceptual model as depicted on table 4.7 below, based on Henseler et al. (2009).

I assess the composite reliability or unidimensionality of the indicators using the Cronbach´s alpha and the Dillon-Goldstein´s rho. Values of Cronbach's alpha above 0.80 in later stages of the research are recommended (Chin, 1998; Henseler et al., 2009; Nunnaly and Bernstein, 1994). A block of manifest variables is considered as unidimensional when the Dillon-Goldstein's rho is larger than 0.7. This statistic is considered to be a better indicator of the unidimensionality of a block than the Cronbach's alpha (Chin, 1998).

I assess each indicator’s reliability by checking the absolute standardized outer loadings which measures the variance of an indicator explained by its latent variable. Values above 0.70 are recommended (Churchill, 1979; Henseler et al., 2009).

I assess convergent validity by calculating the Average Variance Extracted (AVE). AVE was originally proposed by Fornell and Larcker (1981). AVE "*attempts to measure the amount of variance that an LV component captures from its indicators relative to the amount due to measurement error*" (Chin, 2010:670). A value greater than 0.50 is an indication of convergent validity; this means that, on average, a latent variable is able to explain more than half of the variance of its indicators (Götz et al. 2009).

Discriminant validity is assessed by two different criteria: the Fornell and Larcker (1981) criterion and the examination of cross loadings. The former is assessed by comparing the AVE with the squared correlations between latent variables. The AVE value should be larger than the squared correlations between variables which mean that each construct is more related to its own measures than with other constructs. The cross-loadings of manifest variables i.e. the correlation of an indicator with its latent variable should be higher than its correlation with any other latent variable.

Table 4.7 – Assessing reflective measurement and structural models

Reflective measurement model			
Criterion	**Measures**	**Recommendation**	**References**
Composite reliability	Internal consistency reliability, Dillon-Goldstein rho	≥ 0.7, early stages of research; ≥ 0.8, later stages; 0.6 ≤ indicates lack of reliability	(Nunnaly and Bernstein, 1994; Chin, 1998; Henseler et al, 2009)
Indicator reliability	Absolute standardized outer loadings (variance of an indicator explained by its latent variable)	≥ 0.7 If standardized loading ≤ 0.4: eliminate item	(Churchill, 1979; Henseler et al. 2009
Convergent validity	Average variance extracted (AVE) (variance of the indicators explained by the latent variable).	≥ 0.5	(Fornell and Larcker, 1981; Götz et al. 2009)
Discriminant validity on construct level (Different constructs should have sufficient difference, i.e. the joint set of indicators is expected not to be unidimensional)	Fornell and Larcker criterion	AVE of each latent variable ≥ highest squared correlation with any other latent variable	(Fornell and Larcker, 1981)
Discriminant validity on indicator level	Cross-loadings	Loading of each indicator > its cross-loadings	(Chin, 1998; Götz et al. 2009)
Structural Model			
Criterion	**Measures**	**Recommendation**	**References**
Variability on endogenous latent variables explained by the latent variables	R^2, coefficient of determination,	0,67 - substantial 0,33 - moderate 0,19 - weak	(Chin, 1998)
Validation of the theoretically assumed relationships between latent variables.	β, standardized path coefficients. Interpret as in ordinary least squares regression	Sign, magnitude and total effects.	(Tenenhaus et al. 2005)
Effect on path model	f^2, effect size, effect of a predictor latent variable	0.35 - substantial 0.15 - moderate 0.02 - weak	Cohen (1988)
Model's capability to predict latent variable indicators	Q^2, Stone-Geisser, measured using blindfolding procedures	Q^2 ≥0, predictive relevance: q^2: 0.35 - large 0.15 - medium 0.02 - small	(Stone, 1974; Geisser, 1975; Tenenhaus et al. 2005)
Global criterion of goodness of fit			
Focus on overall prediction performance of the model	Relative Gof, accounts for PLS model performance at both the measurement and the structural model	Relative GoF > 90%, good model	(Chin, 2010; Tenenhaus et al. 2004);

Source: adapted from Henseler et al., (2009); presentation based on Hortinha (2010)

4.6.3. PLS-PM structural model assessment

The structural model quality will be assessed by five criteria, depicted in table 4.9 above: The first criterion is the variability on endogenous latent variables explained by the model, measured by the R^2, the multiple correlation squared. R^2 values of endogenous constructs assess the predictive power of the structural model (Chin, 2010). Values of 0.67 are considered as substantial, 0.33 as moderate and 0.19 as weak (Chin, 1998).

The second criterion concerns the validation of the theoretically assumed relationships between latent variables; it is assessed by the sign, magnitude and significance of the standardized path coefficients which should be interpreted as in ordinary least squares regression (Tenenhaus et al. 2005).

The third criterion concerns the effect size i.e. the effect of each predictor latent variable on the predicted latent variable at the level of the structural model (Henseler et al. 2009). The effect size as per Cohen (1988) is considered large at 0.35, medium at 0.15 and small at 0.02.

The fourth criterion, the Stone-Geisser Q^2 (Stone, 1974; Geisser 1975) assesses the model's capability to predict latent variable indicators. Q^2 values larger than zero give evidence that the model has predictive relevance; negative Q^2 values indicate a lack of predictive relevance (Henseler et al. 2009). I can calculate the q^2 value for each latent endogenous variable. Values of 0.35, 0.15 and 0.02 reveal a large, medium or small predictive relevance of a certain latent variable (Henseler et al., 2009).

The fifth and last criterion was proposed by Tenenhaus et al., (2004). It is a holistic criterion of goodness of fit (GoF) with a focus on the overall prediction performance of the model. It strives to measure the PLS-PM model performance in both the measurement and the structural model. The GoF index is obtained as the geometric mean of the average communality index and the average R^2 value. A value of the relative GoF above 0.90 suggests a good model (Chin, 2010).

4.6.4. Testing mediation

To test each of the mediating effects hypothesized, I follow Baron and Kenny (1986) approach which means I need to estimate the following three PLS-PM models:

Model 1: With the effect of the independent variable on the mediating variable;

Model 2: With the effect of the independent variable on the dependent variable;

Model 3: With the effect of the independent variable on the dependent variable, in the presence of the mediating variable.

Three conditions need to be present to confirm the mediating effect:

1. The relationships in model 1 and 2 should be significant;
2. In model 3, the relationship between the mediator and the dependent variable should be significant;
3. The effect of the independent variable on the dependent variable in model 3 should be non-significant, for a full mediation, or should be less than in model 2 for a partial mediation.

The significance of the possible reduction on the effect from model 2 to model 3 must be assessed mathematically. The Sobel test is one of the most used, but other tests are suggested such as the Aroian and the Goodman tests (MacKinnon et al., 2002; Preacher and Hayes, 2008).

4.6.5. Testing moderation

I intend to research the discrete moderating effects of the type of respondents on the model relationships. I follow the methodology proposed by Esposito Vinzi et al. (2011) to compare multi-groups in PLS-PM: 1) split sample in two categories, according to the moderator variable; 2) estimate the path coefficients trough PLS-PM for each subsample by means of bootstrap; 3) the differences between path coefficients are interpreted as moderation effects.

Local models can be compared according to differences in:

- Structural model parameters
- Measurement model parameters
- Latent variable scores
- Quality indexes

Another procedure that I will use to test the discrete moderating effects is by means of the permutation procedure proposed by Chin (2003).

4.7. Conclusion

This chapter presented the methodology approach to this research study. In the next chapter I present and discuss the results obtained, following the data procedures described above.

CHAPTER 5 – FINDINGS

In this chapter, the findings of this research are presented and discussed. The first section outlines the profile of the sample and their characteristics according to the defined characterization variables. The analysis of results is made in the second section.

The measurement and structural models are assessed in the third and fourth sections and following the procedures set in chapter 4 .

The results are presented and discussed in section five following the hypothesized relationships set out in chapter 3.

5.1. Sample profile

The research hypotheses were tested in an online survey of the Portuguese Municipalities that had already implemented SIADAP in the year 2007. Although this was the second year in which SIADAP had been compulsory for all Municipalities, only 171 (or 56% of the 308 Municipalities) used SIADAP by 2007 according to information supplied by DGAL – *Direção-Geral das Autarquias Locais*, a government agency which deals with Municipalities and supported the research project. A total of 152 questionnaires from 52 different Municipalities were collected as previously referred.

I used nine characterization variables to segment the respondents of the sample and to understand their position in relation to SIADAP (the performance measurement tool which has been used in municipalities since 2006).

Concerning age of respondents, the two segments with most respondents, between 31 and 50 years old, accounts for 71.7% of total (please see table 5.1)

Table 5.1 – Age of respondents

Age (years)	Frequency	Percent	Cumulative Percent
30 <	7	4.6	4.6
31-40	**55**	**36.2**	40.8
41-50	54	35.5	76.3
51-60	34	22.4	98.7
> 60	2	1.3	100
Total	152	100	

Table 5.2 reveals that the majority of respondents are men, with the highest percentage (70.2%) in the role of elected official. Please see Appendix 8 for a cross tabulation gender / role.

Table 5.2 –Respondents' gender

Gender	Frequency	Percent
Female	57	37.5
Male	**95**	**62.5**
Total	152	100

Table 5.3 shows that most of the questionnaires, 88.2% of the total, were answered by Managers and Elected Officials.

Table 5.3 – Role in Municipality

Role	Frequency	Percent
Elected Official	47	30.9
Manager	**87**	**57.2**
Middle Manager	11	7.2
Skilled worker	5	3.3
Other	2	1.3
Total	152	100

The education level is reported in table 5.4 which shows most of the respondents have a university degree, 78.9% of total. The "Masters/PhD" segment is the one that most supports performance measurement; this can be seen in the cross-tabulation between variable Q53 "education" and the indicator Q17 "The Municipality's investment in performance management is worthwhile", where 47.4% of respondents with this education level "Agree" and "52.6% "Strongly agree" (Appendix 8).

Table 5.4 – Education

Education	Frequency	Percent	Cumulative Percent
6th grade	1	0.7	0.7
9th grade	1	0.7	1.3
12th grade	11	7.2	8.6
Graduate	**120**	**78.9**	87.5
Masters/PhD	19	12.5	100
Total	152	100	

The municipality size by the number of employees (Q56 variable) is reported in Table 5.5 and shows that most of the respondents are in the two segments of up to 500 employees. No major differences are found in the SIADAP assessment between the different segments of municipality size when we cross tabulate (Appendix 8) the size of the Municipality (Q56 variable) and the respondents' "Assessment of SIADAP" (Q59 variable) .

Table 5.5 – Municipality size (number of employees)

Size Municipality (number employees)	Frequency	Percent	Cumulative Percent
< 200	38	25.0	25.3
201 - 500	**53**	**34.9**	60.7
501 - 800	20	13.2	74.0
801 - 1200	20	13.2	87.3
> 1200	19	12.5	100.0
Total	150	98.7	
NS/NA	2	1.3	
	152	100	

Table 5.6 shows that the majority of respondents, 76.1%, have used SIADAP since 2007, at least. The survey was conducted in 2010.

Table 5.6 – Starting year with SIADAP

Starting year with SIADAP	Frequency	Percent	Cumulative Percent
2006	51	33.6	37.0
2007	**54**	**35.5**	76.1
2008	25	16.4	94.2
2009	8	5.3	100.0
Sub-Total	138	90.8	
Not implemented	6	3.9	
NS/NA	8	5.3	
Sub-Total	14	9.2	
Total	152	100	

Table 5.7 shows that the majority of respondents had no prior "Training in Public Management". "Elected Officials" is the segment in which no training is the highest;

89.4% of Elected Officials have no training in public management (Appendix 8 – table 5.7). From my experience I know that most elected officials are the senior managers of the municipalities.

Table 5.7 – Training in Public Management

Training in Public Management	Frequency	Percent
Yes	55	36.2
No	**97**	**63.8**
Total	152	100

A final question reported in Table 5.8 asked respondents to evaluate their level of agreement/disagreement with SIADAP (Q59 variable). The majority of answers show a positive assessment, 75.6% of total.

Table 5.8 – Assessment on SIADAP

SIADAP Assessment	Frequency	Percent	Cumulative Percent
Totally negative	4	2.6	2.6
Negative	14	9.2	11.8
Slightly negative	7	4.6	16.4
Neutral	12	7.9	24.3
Slightly positive	49	32.2	56.6
Positive	**62**	**40.8**	97.4
Totally Positive	4	2.6	100.0
Total	152	100	

5.2. Analysis of results

Twenty six out of the 27 manifest variables in table 5.9 have means above 4 and most of them above 5 in a scale from 1 to 7. The construct managerial effectiveness of performance measurement (variables Q1_1 to Q1_9) is the only case where the mean is above 5 in all variables.

Table 5.9 – Summary statistics of manifest variables

Variable	Observations	Minimum	Maximum	Mean	Std. deviation
Q2_1	138	1	7	5.390	1.410
Q2_2	138	2	7	5.348	1.423
Q2_3	138	2	7	5.290	1.347
Q2_4	138	1	7	4.536	1.490
Q2_5	138	1	7	4.529	1.571
Q3_1	138	2	7	4.847	1.185
Q3_2	138	1	7	4.920	1.325
Q3_3	138	2	7	5.051	1.270
Q3_4	138	2	7	5.065	1.092
Q3_5	138	2	7	5.399	1.053
Q3_6	138	2	7	5.551	1.110
Q3_7	138	2	7	5.529	1.105
Q3_8	138	2	7	5.138	1.124
Q4_1	138	1	7	4.481	1.312
Q4_2	138	1	7	4.522	1.275
Q4_3	138	1	7	4.543	1.280
Q4_4	138	1	6	3.919	1.352
Q4_5	138	1	7	4.093	1.411
Q1_1	138	1	7	5.913	1.073
Q1_2	138	1	7	5.341	1.396
Q1_3	138	1	7	5.533	1.394
Q1_4	138	1	7	5.196	1.419
Q1_5	138	1	7	5.268	1.375
Q1_6	138	1	7	5.101	1.342
Q1_7	138	2	7	5.696	1.243
Q1_8	138	2	7	5.638	1.227
Q1_9	138	1	7	5.152	1.329

The histograms for each variable shows that the distribution of almost all variables is negatively biased (Appendix 7). The Kolmogorov-Smirnov test of normality was highly significant for all the manifest variables in both cases, $p<0.05$ and $p<0.01$ (Appendix 7).

Table 5.10 presents the outer model or measurement model weights, the coefficients of each manifest variable in the linear combination used to estimate the latent variable scores.

The manifest variables Q2_2 (manager support) and Q2_3 (supervisor support) are the ones with with the greater weight on the latent variable stakeholders' support. The manifest variables Q3_6 (the skills of managers) and Q3_7 (the skills of supervisors) are the ones with the greater weight on the latent variable intangible resources. The manifest variable Q4_4 (technical training on performance management for workers) has the greater weight on the latent variable technical training. Finally, The manifest variables Q1_6 (performance indicators are reliable) and Q1_9 (performance measurement results

can be trusted) are the ones with the greater effect on the latent variable managerial effectiveness of performance measurement.

Table 5.10 – Outer model weights

Latent variable	Manifest variables	Outer weight
Sup	Q2_1	0,232
	Q2_2	0,242
	Q2_3	0,254
	Q2_4	0,228
	Q2_5	0,233
Res	Q3_1	0,144
	Q3_2	0,143
	Q3_3	0,134
	Q3_4	0,132
	Q3_5	0,173
	Q3_6	0,188
	Q3_7	0,182
	Q3_8	0,152
Tra	Q4_1	0,222
	Q4_2	0,224
	Q4_3	0,194
	Q4_4	0,235
	Q4_5	0,224
Efe	Q1_1	0,145
	Q1_2	0,131
	Q1_3	0,131
	Q1_4	0,121
	Q1_5	0,130
	Q1_6	0,174
	Q1_7	0,148
	Q1_8	0,148
	Q1_9	0,164

In table 5.11 below we depict communalities and redundancies which let us know the impact of each manifest variable on the associated latent variable.

The manifest variables Q2_2 (manager support) and Q2_3 (supervisor support) are the ones with the greater effect on the latent variable stakeholders´support. The manifest variables Q3_6 (the skills of managers) and Q3_7 (the skills of supervisors) are the ones with the greater effect on the latent variable intangible resources. The manifest variables Q4_1 (technical training for performance management staff) and Q4_2 (technical training for managers) are the ones with the greater effect on the latent variable technical training. Finally, The manifest variables Q1_7 (investment in performance measurement is worthwhile) and Q1_8 (performance measurement improves productivity) are the ones

with the greater effect on the latent variable managerial effectiveness of performance measurement.

Table 5.11 – Communalities and redundancies of manifest variables

Latent variable	Manifest variables	Communalities	Redundancies
Sup	Q2_1	0,590	
	Q2_2	0,812	
	Q2_3	0,820	
	Q2_4	0,676	
	Q2_5	0,637	
Res	Q3_1	0,510	0,168
	Q3_2	0,507	0,167
	Q3_3	0,670	0,220
	Q3_4	0,565	0,186
	Q3_5	0,703	0,231
	Q3_6	0,816	0,269
	Q3_7	0,813	0,267
	Q3_8	0,508	0,167
Tra	Q4_1	0,879	0,182
	Q4_2	0,923	0,191
	Q4_3	0,876	0,182
	Q4_4	0,791	0,164
	Q4_5	0,691	0,143
Efe	Q1_1	0,646	0,410
	Q1_2	0,601	0,381
	Q1_3	0,597	0,378
	Q1_4	0,634	0,402
	Q1_5	0,588	0,373
	Q1_6	0,601	0,381
	Q1_7	0,649	0,412
	Q1_8	0,649	0,412
	Q1_9	0,458	0,290

5.3. Measurement Model

Table 4.7 above sets out the criteria used to assess the measurement and the structural models as well a criterion to assess the GoF (goodness of fit). In the next sections I present the results based on the final model with 138 observations. A total of 14 observations with more than 10% of missing values in the total of indicators were deleted (Hair et al.1998). The remaining 15 missing values were replaced by the mean (Hair et al.1998).

I excluded indicator Q2_6 due to the fact that its loading was higher than 0.70 in two latent variables and very close in each of them, 0.711 on latent variable “Intangible Resources” (Res) and 0.706 on latent variable “Managerial Effectiveness of Performance

Performance" (Efe), causing discriminant validity problems, and also because it was not a critical indicator at the conceptual level.

To assess the measurement model, the composite reliability was tested in Table 5.12 using Cronbach´s alpha and Dillon-Goldstein rho. Cronbach´s alpha ranges from 0.895 to 0.949 and D.G. rho ranges from 0.923 and 0.961, well above the 0.70 recommended threshold (Henseler et al, 2009).

Table 5.12 – Composite reliability

Latent Variable	Number of Manifest variables	Cronbach´s alpha	D.G. rho (PCA)
Stakeholders´ support **(Sup)**	5	0.895	0.923
Intangible resources **(Res)**	8	0.917	0.933
Technical training **(Tra)**	5	0.949	0.961
Managerial effectiveness of performance measurement **(Efe)**	9	0.917	0.932

Regarding item reliability, all the standardized loadings of manifest variables in Table 5.13, are above 0.70, except Q1_9. Although just below this threshold, and because of its conceptual importance, it was decided to keep this item. This is acceptable according to Henseler et al. (2009) because its value is higher than 0.40.

Table 5.13 – Item reliability: standardized loadings of manifest variables

Latent variable	Manifest variables	Standardized loadings
Sup	Q2_1	0.768
	Q2_2	0.901
	Q2_3	0.905
	Q2_4	0.822
	Q2_5	0.798
Res	Q3_1	0.714
	Q3_2	0.712
	Q3_3	0.818
	Q3_4	0.752
	Q3_5	0.839
	Q3_6	0.903
	Q3_7	0.901
	Q3_8	0.713
Tra	Q4_1	0.937
	Q4_2	0.961
	Q4_3	0.936
	Q4_4	0.889
	Q4_5	0.831
Efe	Q1_1	0.804
	Q1_2	0.775
	Q1_3	0.773
	Q1_4	0.796
	Q1_5	0.767
	Q1_6	0.775
	Q1_7	0.806
	Q1_8	0.806
	Q1_9	0.677

The convergent reliability is confirmed by the fact that the results of AVE (average variance extracted) are all above the value of 0.50 (table 5.14)

Table 5.14 – Convergent reliability: AVE for latent variables

Latent variable	Mean Communalities (AVE)
Sup	0.707
Res	0.636
Tra	0.832
Efe	0.602

Discriminant validity is confirmed at the latent variable level by the fact that squared correlations between a pair of latent variables are always smaller than the AVE for each latent variable (Table 5.15);

Table 5.15 – Discriminant validity of latent variables

	Squared correlations				
Latent Variable	Sup	Res	Tra	Efe	AVE
Sup	**1**	0.329	0.195	0.600	0.707
Res	0.329	**1**	0.117	0.352	0.636
Tra	0.195	0.117	**1**	0.152	0.832
Efe	0.600	0.352	0.152	**1**	0.602
(AVE)	0.707	0.636	0.832	0.602	

Discriminant validity it is also confirmed at the indicator level, by the fact that loadings for each latent variable are always larger than its cross-loadings with other variables (Table 5.16).

Table 5.16 – Cross – loadings

	Latent variable			
Manifest variable	Sup	Res	Tra	Efe
Q2_1	**0.768**	0.485	0.308	0.671
Q2_2	**0.901**	0.527	0.348	0.656
Q2_3	**0.905**	0.558	0.367	0.678
Q2_4	**0.822**	0.450	0.433	0.560
Q2_5	**0.798**	0.382	0.404	0.687
Q3_1	0.386	**0.714**	0.274	0.438
Q3_2	0.402	**0.712**	0.248	0.444
Q3_3	0.385	**0.818**	0.210	0.425
Q3_4	0.404	**0.752**	0.224	0.376
Q3_5	0.528	**0.839**	0.298	0.495
Q3_6	0.551	**0.903**	0.349	0.535
Q3_7	0.545	**0.901**	0.332	0.511
Q3_8	0.408	**0.713**	0.215	0.538
Q4_1	0.374	0.362	**0.937**	0.339
Q4_2	0.416	0.298	**0.961**	0.370
Q4_3	0.372	0.262	**0.936**	0.307
Q4_4	0.438	0.296	**0.889**	0.406
Q4_5	0.406	0.336	**0.831**	0.344
Q1_1	0.615	0.502	0.240	**0.804**
Q1_2	0.632	0.376	0.219	**0.775**
Q1_3	0.569	0.447	0.211	**0.773**
Q1_4	0.506	0.440	0.184	**0.796**
Q1_5	0.476	0.482	0.259	**0.767**
Q1_6	0.672	0.443	0.511	**0.775**
Q1_7	0.596	0.587	0.205	**0.806**
Q1_8	0.621	0.489	0.278	**0.806**
Q1_9	0.656	0.371	0.503	**0.677**

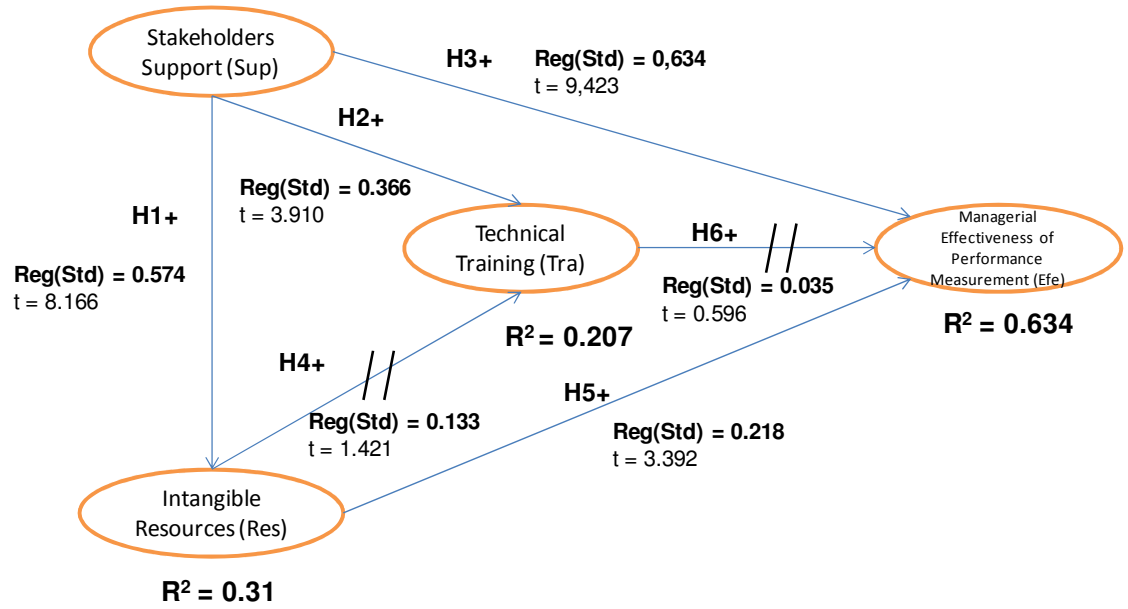
Having analyzed the measurement model as per the pre-requisites set in the literature (see table 4.7 above), I now present the analysis of results of the structural model which links the latent variables of the model.

5.4. Structural model assessment and hypotheses testing

Figure 5.1 presents the path diagram of the structural path of the main effects model with values of R^2 for each of the endogenous latent variables as well as the PLS-PM path coefficients, and its t-values with significance at $p<0,05$.

Following the criteria to assess the structural model based on the variances of the endogenous latent variables explained by the model, R^2 values of 0.207 and 0.31 are considered moderate values (Henseler et al, 2009) and the R^2 = 0.634 of the latent variable managerial effectiveness of performance measurement is substantial.

Figure 5.1 – Structural model of the main effects model



Significance p<0.05

As for the validation of the theoretically assumed relationships between latent variables, all of them are positive and confirm the hypotheses and relationships defined, with exception of the H4 and H6.

Stakeholders' support has a positive and significant influence on intangible resources (β=0.574; t=8.166), on technical training (β=0.366; t=3.910) and on effectiveness of managerial effectiveness of performance measurement (β=0.634; t=9.42). Thus, H1, H2 and H3 are supported. Intangible resources has a positive and significant influence on the managerial effectiveness of performance measurement (β=0.218; t=3.393) and therefore H5 is also supported.

Berman and Wang (2000:413) refer that stakeholders' support and technical infrastructure constitute "the capacity for performance measurement". I have confirmed this relation through H1.

Human resources must be trained to develop knowledge to measure performance (Fountain et al. 2003; Hatry 1999; Liner et al. 2001; Newcomer et al. 2002); this is directly dependent upon the stakeholders' support. The support for H2 is in line with these authors. The managerial effectiveness of performance measurement is dependent upon stakeholders' involvement and support (Berman and Wang, 2000;Yang and Hsieh, 2007). The support for H3 is in line with these authors.

The effect of intangible resources on performance is well illustrated in the literature (Barney, 1991; Daft, 1983; Wernerfelt, 1984) and H5 confirms this relationship.

There are two hypotheses where the relation is non-significant using a α=0.05: a) the effect of intangible resources on technical training (β=0.133; t=1.421) defined on the H4 hypothesis, and b) the effect of technical training on the managerial effectiveness of performance measurement (β=0.035; t=0.595) defined on H6.

Concerning the impact and contribution of the latent predictor variables to the predicted latent variable Efe (managerial effectiveness of performance measurement) the major impact is given by the latent variable Sup (stakeholders' support) which accounts for 77,4% of the total contribution of R^2, which accounts for the total variance explained by the model.

Table 5.17 – Impact and contribution of the variables to Efe

	Sup	Res	Tra
Correlation	0.775	0.594	0.390
Path coefficient	0.634	0.218	0.035
Correlation * path coefficient	0.491	0.129	0.014
Contribution to R^2 (%)	77.446	20.404	2.151
Cumulative %	77.446	97.849	100.000

5.4.1. Main effects model analysis

In the case of hypothesis 4, this means that intangible resources do not have a significant influence on technical training i.e. indicators such as the organization structure, the culture of the organization the skills of their managers and employees do not have influence on the amount of technical training necessary to obtain benefits through performance measurement.

As Ridder et al., (2005:452) state: "*there is no guarantee that management tools can be adapted successfully across organizational fields (for example from the profit to the public sector)*". The adaptation implies that knowledge and skills must be acquired and therefore training given in the new methods and tools. The fact that hypothesis 6 is not supported could mean that technical training in performance measurement is not defined accordingly to the needs and reality of the Portuguese municipalities. And, therefore, has no effect on the managerial effectiveness of performance measurement.

My personal experience of implementing performance measurement systems in several municipalities tends to favour this conclusion. In some cases the annual training plan is not defined following a pre-evaluation of the managers' and employees' lack of skills and knowledge; instead, it is a function of the training offer in the market, the idiosyncrasies of the human resources manager and it is generally related to the funding available for training.

The lack of support for hypothesis 6 might mean that the respondents to the survey, the elected officials and managers, do not relate the quantity of technical training to the managerial effectiveness of performance measurement. This is contrary to some evidence found in the literature (Berman and Wang, 2000; Bontis et al, 2002; Yang and Hsieh, 2007) that has found a significant relation between organizational learning, of which technical training is a component, and performance.

However, some authors also refer that organizational learning could have no effect on performance (Crossan et al, 1995) or even that there could be a negative relation between organizational learning and performance. Bontis et al, (2002:437) states that: "*Furthermore, the proposition that the misalignment of stocks and flows in an overall organizational learning system is negatively associated with business performance is also supported"*. Bontis et al (2002) introduce the concepts of stocks of learning, the ones that are in a level of the organization, individual, group or at organization level and the concept of flow of learning between levels to create feedback and feed-forward effects. Their misalignment can harm performance as suggested by the findings of the above mentioned authors.

I consider the non-significant statistical relation between technical training and the managerial effectiveness of performance measurement surprising and particularly important. The concept of misalignment of stocks and flows (Bontis et al, 2002) can be translated into practice. From my observation and experience of working with municipalities, and like other organizations of public administration in Portugal, most training is funded by European Union (EU) grants. The current POPH program ("*Programa Operacional Potencial Humano*") and its predecessors in the human resources area aim to provide training by maximizing the number of hours and the number of trainees. It is not uncommon to have 28 hour programs, equivalent to four days of work, to train dozens of employees in subjects such as "the appraisal interview".
When managing a training project on SIADAP, I understood at the first meeting with the Mayor of a certain Municipality that his main concern was the number of hours of training their managers would be given. He wanted to keep the hours to a minimum because he was well aware that the aim of this type of program is often to maximize the number of hours of training without caring too much about the benefits. His over-riding concern was that when managers and employees are in training they are not working.

On the other hand, training for elected officials is not funded by EU funds. The cross-tabulation in Appendix 8 referred to table 5.7 comparing characterization variables 5.4 and 5.8 demonstrates that almost 90% of elected officials had no training in Public Management, despite being the top managers in Municipalities. This fact, together with the view that most training in municipalities is not seen as very beneficial, could explain why hypotheses 4 and 6 were not supported. We can link this situation to the misalignment of stocks and flows of learning (Bontis et al, 2002) to support the finding implied by the non-support of H6.

5.4.2. Effect sizes

Table 5.18 shows that the effect size (f^2) on the predicted variable managerial effectiveness of performance measurement" (Efe), the effect on path model of the predictor latent variables, following the rules stated by Cohen, 1998, shows that "Stakeholders' support (Sup) is substantial (f^2=0.663) and the effect sizes of "Intangible resources" (Res) (f^2=0.086) and "technical training" (Tra) (f^2=0.003) are both weak.

Table 5.18 – Effect sizes

Latent variable	Value	Standard error	t	Pr > |t|	f^2
Sup	0.634	0.067	9.423	0.000	**0.663**
Res	0.218	0.064	3.392	0.001	**0.086**
Tra	0.035	0.059	0.596	0.552	**0.003**

5.4.3. Model's capability to predict latent variables

As we have seen before the Stone-Geisser criterion Q^2 (Stone, 1974; Geisser 1975) assesses the model's capability to predict latent variable indicators. Q^2 values (the average of q^2 values) larger than zero give evidence that the model has predictive relevance. Negative Q^2 values indicate a lack of predictive relevance (Henseler et al. 2009). Values of q^2 for each latent endogenous variable of 0.35, 0.15 and 0.02 reveal a large, medium or small predictive relevance of a certain latent variable (Henseler et al. 2009).

Table 5.19 allows us to conclude that the model has predictive relevance: Efe has a large predictive relevance, Res has a medium predictive relevance and Tra has a small predictive relevance.

Table 5.19 – Model's capability to predict

Latent Variable	Total sum of squares	Residual sum of squares	Redundancies q^2
Sup			
Res	1,104	942	0.146
Tra	690	659	0.045
Efe	1,242	807	0.350
		Q^2	**0.181**

Thus, we can briefly conclude that Stakeholders' support is the most important latent variable in terms of effect size and predictive relevance; intangible resources have a weak effect and a moderate predictive relevance, while technical training has a weak effect and a small predictive relevance.

5.4.4. Goodness of Fit index (GoF)

Focusing on overall prediction performance of the PLS model, Tenenhaus et al., (2004) proposed a global criterion of goodness of fit (GoF) to measure the performance of the model on the measurement and the structural models. The absolute GoF index combines the average communality index related to the measurement model and the average R^2 related to the structural model.

The relative GOF index is obtained by dividing the absolute value by its maximum value achievable for the analyzed dataset. The outer model is a component of the GoF index based on the communalities (performance of the measurement model). The inner model is a component of the GoF index based on the R2 of the endogenous latent variables (performance of the structural model).

The results presented in table 5.20 show a relative GoF of 0.889, just below of the threshold value (0.90) of a good model (Chin, 2010). The values of the outer model, and the inner model are also high.

Table 5.20 – GoF index results

Type	GoF
Absolute	0.513
Relative	0.889
Outer model	0.996
Inner model	0.893

5.4.5. The mediating effects

Following the Baron and Kenny (1986) procedures to test the mediating effects of intangible resources (Res) between stakeholders' support (Sup) and managerial effectiveness of performance measurement (Efe) and the mediating effects of technical training (Tra) between stakeholders' support (Sup) and intangible resources (Res) and managerial effectiveness of performance measurement (Efe), three models are required for each of the hypothesized mediating effects, as depicted in section 4.6.5.

Table 5.21 presents the standardized path coefficients and the respective t-values to each of the three mediating relationships tested, that allow us to conclude: 1. Res has a partial mediating effect between Sup and Efe. This was confirmed by the Sobel test (z= 3.92, p<0.025) thus supporting H7a.; 2. Tra has no mediating effect between Sup and Efe, because the relationship between the mediator and the dependent variable is not significant in model 3. Thus, H8a is not supported; 3. Tra has a partial mediating effect between Res and Efe. This was confirmed by the Sobel test (z= 2.50, p<0.025) thus supporting H8b.

Table 5.21 – Testing mediating effects

	Variable	Indicator	Res	Efe	Variable	Indicator	Tra	Efe	Variable	Indicator	Tra	Efe
Model 1	**Sup**	β	0,579		**Sup**	β	0,448		**Res**	β	0,348	
		t-value	8.282			t-value	5.851			t-value	4,335	
Model 2	**Sup**	β		0,779	**Sup**	β		0,819	**Res**	β		0,603
		t-value		14.501		t-value		16.636		t-value		8,816
Model 3	**Sup**	β	0,575	0,637	**Sup**	β	0,444	0,798	**Res**	β	0,343	0,523
		t-value	8,193	9.911		t-value	(5.776)	14.517		t-value	4.265	7,186
	Res	β		0,230	Tra	β		0,046	Tra	β		0,214
		t-value		3.574		t-value		0.837		t-value		3,008

5.4.6. Testing moderation

We test the fact that the differences between groups could moderate the model relationships. There are different groups of respondents that we recognize through a classification process included in the data. The purpose of the analysis is to search for significant differences in the perceptions of the respondents, estimating as many models as the number of groups by means of multi-group analysis and permutation tests (Esposito Vinzi et al., 2008). Following the estimation, the models of the different groups are compared in terms of the differences of structural path coefficients and goodness-of-fit (GOF) index, to identify differences between the groups.

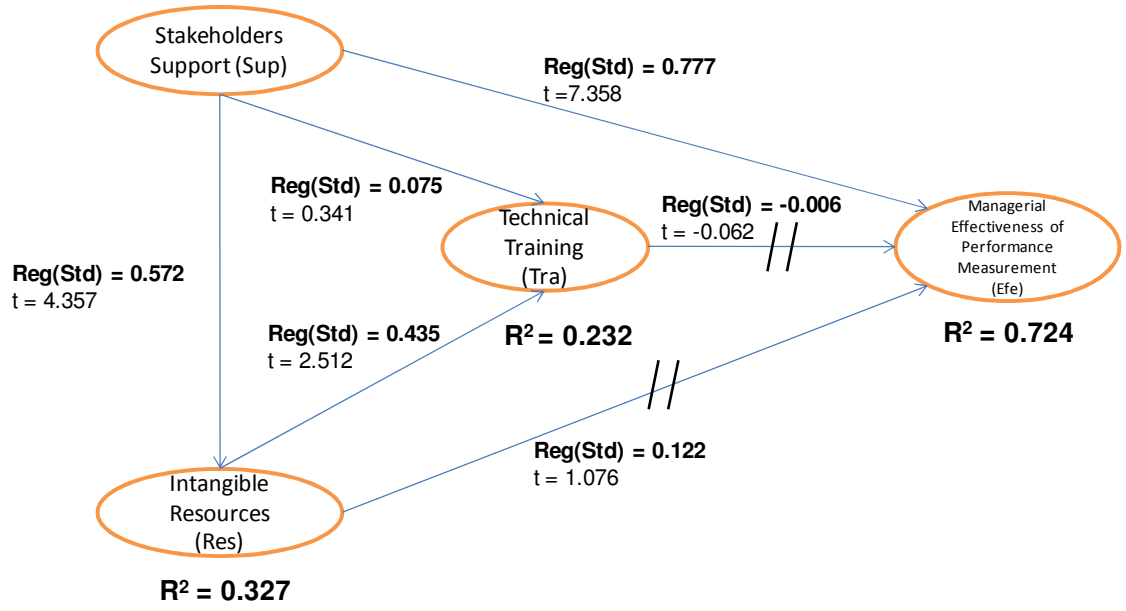
Based on the role of each respondent, we defined two groups: one with the elected officials (group 1), and the other with managers (group 2). We used XLSTAT-PLSPM to perform the analysis. Results of the permutation test are given in table 5.22 for the differences between path coefficients (p<0.05). No significant differences exist.

Table 5.22 – Permutation test - differences of path coefficients between group 1 (elected officials) and group 2 (managers)

Latent variables	Difference	P	Significant
Sup -> Res	0.010	0.921	No
Sup -> Tra	0.391	0.188	No
Res -> Tra	0.370	0.158	No
Sup -> Efe	0.191	0.149	No
Res -> Efe	0.154	0.356	No
Tra -> Efe	0.027	0.911	No

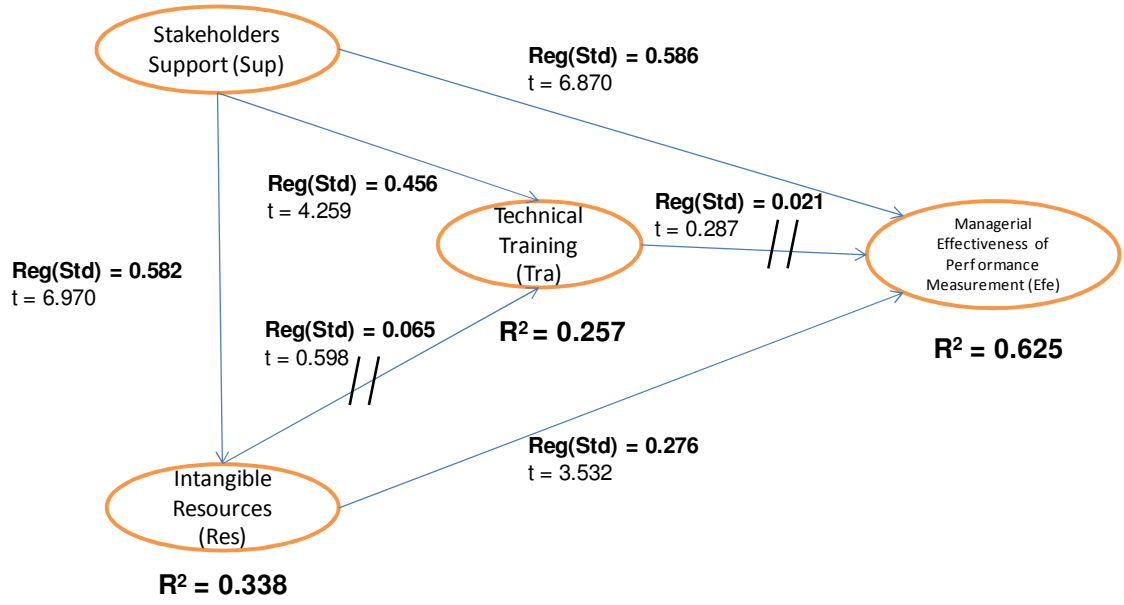
The multi-group analysis for the two groups, elected officials (group 1) and managers (group 2) produced the two models depicted in figures 5.2 and 5.3.

Figure 5.2 – Multi-group analysis – group 1: elected officials (n=41)



Significance p<0.05

Figure 5.3 – Multi-group analysis – group 2: managers (n=97)



Significance p<0.05

In both models the relationship between technical training and managerial effectiveness of performance measurement is not significant. There is a difference between the two models in that in the group of elected officials, the relationship intangible resources and managerial effectiveness of performance measurement is not significant. In the group of managers, the relationship between intangible resources and technical training is not significant. The interpretation is done below.

There is a disagreement between the two groups on what concerns the effects over technical training (Tra). Whereas elected officials consider Intangible resources the most important effect (β=0.435; t=2.512) on technical training, managers consider it to be stakeholders´ support (β=0.456; t=4.259), please see figures 5.2 and 5.3 above.

This could have practical implications because the causal motives for technical training are significantly different for the two groups. Elected officials consider that training is more dependent upon the intangible resources like the organizational structure, the culture of the organization and the skills and know-how of managers and workers. Managers consider stakeholders' support the most important driver of technical training. In practical terms, we could interpret this as managers perceiving support from stakeholders, mainly

elected officials, to be the most important determinant of the quantity of technical training necessary to implement effective performance measurement.

It is also important to stress the difference between the path coefficients of the two groups for the Res-> Efe relation in the models estimated through the multi-group analysis (figures 5.2 and 5.3 above). For Group 1 of elected officials, intangible resources (Res) do not have a significant effect size (β=0.122; t=1.076) on the managerial effectiveness of performance measurement (Efe) whereas for Group 2 of managers, the effect is significant (β=0.276; t=3.532). It could mean that despite not giving much importance to the effect of intangible resources on technical training, the group of managers still deem the impact of intangible resources on the managerial effectiveness of performance measurement to be important.

An analysis of the direct Sup -> Efe relation between the two groups provides a clearer picture. For Group 1 of elected officials, stakeholders' support has a larger effect (β=0.777; t=7.358) on the managerial effectiveness of performance measurement than for Group 2. Although this relation also has the largest effect (β=0.586; t=6.870) on the managerial effectiveness of performance measurement for the group 2 of managers, it is smaller than for Group 1. As for Tra -> Efe, there are no differences in effect size the two groups, and the two path coefficients are non significant, Group 1 (β=-0.006; t=-0.062) and Group 2 (β=0.021; t=0.287). It should be noted that the group of elected officials has a negative path coefficient.

Stakeholders' support has the greatest effect on the managerial effectiveness of performance measurement for both groups, although the size of the effect is smaller in the case of managers.

The analysis of the model quality in Table 5.23, including communalities (measurement model) , redundancies (structural model) and the absolute Goodness of fit (GoF) indexes reveals no significant differences between the two groups ($p<0.05$)

Table 5.23 – Differences of model quality indexes between groups 1 (elected officials) and group 2 (managers)

Model quality (Latent variable)	Difference	P	Significant
Communality (Sup)	0.029	0.733	No
Communality (Res)	0.082	0.465	No
Communality (Tra)	0.076	0.208	No
Communality (Efe)	0.023	0.782	No
Redundancy (Res)	0.034	0.822	No
Redundancy (Tra)	0.038	0.812	No
Redundancy (Efe)	0.044	0.713	No
GoF	0.003	0.970	No

The results of the multi-group t test (Esposito Vinci et al, 2008) on table 5.24 below show only a significant difference for the path coefficient Res > Tra, ($p<0.05$). This could be interpreted as the importance that the group of elected officials give to tangible resources (Res) to influence the quantity of technical training (Tra), compared to the group of managers whose perception is that intangible resources has no relevant effect on technical training (please see figure 5.3 above). There is a trade-off effect between the two groups; as seen in Table 5.24, the difference on the path coefficient directed to Tra (Sup -> Tra), between the two groups is 39.1 percent points, whereas the difference between the groups in the path coefficient on Res directed to Tra (Res -> Tra) is 37.0 percentage points.

Table 5.24 – Multi-group t test – Path coefficients differences groups 1 (elected officials) and group 2 (managers)

Path coefficient	Groups	Difference	t (Observed value)	t (Critical value)	DF	p-value	Significant
(Sup -> Res)	2 vs 1	0.010	0.065	1.978	136	0.948	No
(Sup -> Tra)	2 vs 1	0.391	1.675	1.978	136	0.096	No
(Res -> Tra)	2 vs 1	0.370	2.054	1.978	136	0.042	**Yes**
(Sup -> Efe)	2 vs 1	0.191	1.417	1.978	136	0.159	No
(Res -> Efe)	2 vs 1	0.154	1.033	1.978	136	0.303	No
(Tra -> Efe)	2 vs 1	0.027	0.177	1.978	136	0.860	No

The permutation test and multi-group analysis confirms that both of the two groups of elected officials and managers perceive technical training has having no effect on the managerial effectiveness of performance measurement. This is an important insight that must be carefully interpreted for useful recommendations.

These results imply that H9 "All model relationships are moderated by the type of respondents: elected officials and managers", is not supported.

5.5. Main findings

Six of the ten hypotheses presented in chapter 3 are supported and four are not, as shown in Table 5.24 below.

Table 5.25 – Hypotheses testing

Main Effects		Mediating Effects	
H1	Supported	H7	Supported
H2	Supported	H8a	Not Supported
H3	Supported	H8b	Supported
H4	Not supported	**Moderating Effects**	
H5	Supported	H9	Not Supported
H6	Not supported		

We have found some differences between the two groups from the multi-group analysis (please see figures 5.2 and 5.3.) an important finding of this research. Elected officials perceive that technical training is mostly influenced by intangible resources such as the organizational structure and the manager's know-how, unlike managers, who consider that technical training, is most influenced by stakeholders' support. This could have some influence over the fact that technical training has no significant effect on the managerial effectiveness of performance measurement.

In this chapter we discussed the findings on the main effects model, the mediating and the moderating effects and drew some conclusions that will lead to implications and recommendations for both researchers and practitioners. These will be presented in the next chapter together with the limitations of this research and possible avenues for future research.

CHAPTER 6 – CONCLUSIONS

Section one presents the main research contributions at the theoretical and managerial levels. Section two sets out the research limitations while section three describes the possible directions for future research. We will end by summarizing the conclusions.

At this time of crisis in Portugal with economic and financial assistance from abroad, better performance measurement systems will undoubtedly further the quest for improved performance at all levels in public administration, the pursuit of increased levels of efficiency and effectiveness together with a desire to keep or even increase the quality levels of services provided.

The aim of this research was to improve understanding of the determinants of managerial effectiveness of performance measurement in the context of Portuguese municipalities. Three conclusions can be drawn from it.

Firstly, elected officials and managers understand that performance measurement is a useful tool and an investment with a favorable return for municipalities. The respondents with the most positive attitude towards performance measurement have higher levels of formal education, (respondents with Masters or PhD). This brings us to the positive connection between education level and the willingness to understand and use advanced management tools such as performance measurement.

Secondly, from the point of view of elected officials and managers, stakeholders' support is by far the most important determinant of effective performance measurement (Barman and Wang, 2000, Yang and Hsieh, 2007). Although this might be considered a tautology, in my professional experience I have come across several cases in which efforts to implement performance measurement have failed due to the lack of involvement and support from elected officials, when managers attempted to implement it on their own.

Thirdly, intangible resources do have an impact on the managerial effectiveness of performance measurement, although the size of the effect varies between the groups of elected officials and managers. This has practical implications as the quality of resources is almost always related with the size of the municipality. Small municipalities might not be able to afford well prepared technical staff that can help elected officials to develop performance measurement. On the other hand, elected officials seldom have training in

public management, and this could in part explain why many municipalities faced economic and financial problems with rapidly increasing debts (Carvalho et al., 2009), even before the current international financial crisis.

One unexpected finding of this research is that technical training does not have an effect on managerial effectiveness of performance measurement (Yang and Hsieh, 2007). Training in general is not seen by municipalities as having an added value; this may be because emphasis is given to the duration of training and number of trainees involved, not to its benefits. To implement efficient performance measurement systems training it is necessary e.g. on the type of goals in the sense that goals should be outcome measures and not only input or output measures as it usually is (Ammons and Rivenbark, 2008). Moreover, the final purpose of performance measurement should be to improve performance and not to evaluate people (Behn, 2003). Nevertheless, the most common perception, per my own experience, of elected officials, managers and workers is that performance measurement main purpose is individual evaluation. This is also due to the fact that people with this perception ignore its main purpose, to improve performance, among other reasons, due to elected officials' lack of management training.

Finally, elected officials' and managers' perceptions about the relative impact of the different determinants of managerial effectiveness of performance measurement vary. Elected officials perceive stakeholders' support as a necessary and sufficient condition for the managerial effectiveness of performance measurement. This can easily lead to failure because as several studies show resources, capacity and know-how are also necessary (Barman and Wang, 2000; Yang and Hsieh, 2007).

In my experience, many elected officials and managers still do not have a clear understanding of the difference between input and output indicators and outcome indicators, which is vital to improve performance (Ammons and Rivenbark, 2008). Training could provide the necessary information to understand the purposes of performance measurement as well as the technicalities of a good definition of objectives, indicators and targets in the pursuit of improved efficiency and effectiveness.

6.1. Theoretical contribution

This research presents five main contributions to theory:

First, I bring the resource-based view (RBV) theory to the study of public administration. There are different levels of performance in Portuguese municipalities (Carvalho et al., 2009). Like firms, public administration deals with scarce resources and to the best of my knowledge resource based theorizations are scarce in the new public management literature. Ridder et al., (2005) brought this view to the field of municipalities when researching the implementing accrual accounting in some German municipalities. Berman and Wang (2000) developed the concept of "capacity" to performance measurement. The intangible resources construct based on the RBV (Galbreath and Galvin, 2008; Hall 2002) tries to bring the importance of intangible resources in a context of performance improvement, to the public administration field;

Second, I aim to study the role of internal stakeholders, an understudied group of key players. Most of the research on adopting and implementing performance measurement involves internal and external stakeholders (Behn, 2003; Julnes and Holzer, 2001; Yang and Hsieh, 2007). My professional experience in Portugal shows that these external stakeholders seldom influence the performance measurement process. We are not yet in a stage where external stakeholders such as citizens and companies have a direct influence on the priorities set by elected officials, nor at a stage in which elected officials often supply to external stakeholders information about performance measurement results. From my experience Portuguese municipalities have still not successfully developed a process of accountability involving performance measurement and periodic communication with citizens.

Third, I contribute to the new public management literature by researching both the direct impact of technical training in the managerial effectiveness of performance measurement and technical training as a mediator between stakeholders' support and intangible resources and managerial effectiveness of performance measurement. This is related with organizational learning theory (Bontis, 2002, Levinthal and March, 1993) which establishes clear links between learning and performance. Management skills are not highly developed in Portuguese municipalities. One of the main findings of this research is that almost 90% of elected officials have no training in public management, although

they are often the top managers of their municipalities. There is no separation between their political and management roles. This may explain why, according to the findings, training has no impact on performance measurement. Increasingly scarce resources make it particularly important for managers to acquire the necessary skills through technical training to increase efficiency and productivity.

Fourth, although several other studies in more developed countries, namely the USA, Canada and other western countries have addressed performance measurement in municipalities (Ammons and Rivenbark, 2008, Poister and Streib, 1989a, 1989b; Pollanen, 2005; Ridder et al, 2005; Streib and Poister, 1999), I advance theory by testing hypotheses about a very important sector of public administration, municipalities, in a new research setting: Portugal.

Finally, at the methodological level I contribute by using information from different respondents in the same municipalities and at different organizational levels, elected officials and managers, thus preventing common method bias which is one of the most common issues in survey-based research (Podsakoff et al. 2003).

6.2. Managerial contribution and final recommendations

Based on the results of this study, the managerial effectiveness of performance measurement can be improved along several lines.

Firstly, priority must be given to train elected officials in public management so that they have a better understanding of the possible benefits obtained by performance measurement. This is also applicable to the government agencies that work with municipalities, such as DGAL.

Secondly, changes should be made to the type of training in performance measurement given in municipalities. Instead of the predominantly theoretical lectures in classrooms, on-the-job training should be given in the real setting, in which work is monitored so that deviations from plan can be identified and corrective actions implemented.

Thirdly, it should be understood that performance measurement is not simply an individual evaluation tool but rather a means of improving performance. The time is right for this as there will be few career promotions based on individual appraisals in the coming years, but there will be an urgent need to increase efficiency.

Fourth, it is necessary to disseminate the positive perception about the benefits of performance measurement held by the respondents to this study. The respondents may be more aware of the benefits of performance measurement as they were selected from a database of municipalities that had implemented SIADAP from at least 2007 onwards. I have often heard it said in Municipalities that performance measurement is a useless administrative exercise. This attitude could be changed if, for example, the interested parties themselves disseminated best practices and results by skilled practitioners explaining how they successfully improved performance by means of performance measurement.

The small size of some municipalities may be an obstacle to better performance measurement due to the lack of skilled personnel or the difficulty in providing training. The merging of several small municipalities or the concentration of specialists in performance measurement in a common resource center could boost the utilization of performance measurement.

Finally, resources could be allocated and managed more efficiently through comparative studies of performance measurement results. Benchmarking functional or operational areas in different municipalities for outcome indicators and not only input or output indicators could be another route to efficiency improvement.

6.3. Research limitations

This study like all others has some limitations.

Firstly, although in most cases I had more than one answer from each municipality, the same respondent answered all the questions. This could give rise to single respondent bias.

The sample size is another limitation of the study, but was the result of restrictions in time and resources. Although it compares with many studies in the field (Henseler et al, 2009) I have used PLS-PM to minimize sample size effect and the models were run with an adequate number of responses per the number of variables used.

Cross-sectional studies have a limitation in that causal relations between variables could change direction over time. The predicted variable in a longitudinal study could become a predictor, for example higher levels of managerial effectiveness of performance measurement could positively influence stakeholders' support (Yang and Hsieh, 2007).

6.4. Directions for future research

Objective measures of performance (i.e. economic result, indebtedness, financial situation) should be included in future research. Another interesting avenue would be the inclusion of a construct concerning the improvements originated by performance measurement, preferably by objective measures such as savings in changed processes or efficiency increases (Ammons and Rivenbark, 2008). According to Behn (2003), to improve is the ultimate goal of performance measurement. Unless there is improvement, any performance measurement model is worthless.

Increasing the sample size if possible to all the municipalities in Portugal would be an additional benefit. The inclusion of municipalities from other countries like Spain or Italy could reinforce the explanative power of the research.
It would be beneficial to increase the number of latent variables such as external stakeholders or external political support and to fine tune the technical training construct in order to allow the quality as well as the quantity of training to be evaluated. Of course, technical training should also be based on objective indicators like the number of people involved, the length and depth of the training, the level of satisfaction of participants, and its tangible effects in the short term.

The analysis of other moderators such as the size of municipalities, or the level of education in public management of elected officials and managers could also improve the conclusions of the research.

The use of a mixed approach including case studies of municipalities which present good results on objective indicators of performance is another possibility for future research.

6.5. Main Conclusions

This research proposes furthering the literature using Portuguese municipalities in order to understand the determinants of managerial effectiveness of performance measurement.

By integrating three theories, stakeholder's theory, resource-based view and organizational learning theory, I have built an exploratory and explanatory model of the determinants of managerial effectiveness of performance measurement.

I examined the relative impacts of its determinants and concluded that stakeholders' support has a substantial effect, intangible resources have a weak effect and technical training has no effect on the managerial effectiveness of performance measurement.

I trust that this research will stimulate further study on this topic because it is an area in great need of improvement so that it can contribute to overcome the delicate economic and financial situation Portugal is currently facing.

As a practitioner, I hope this study will help improve the work of elected officials and managers and lead to more effective and efficient municipalities that provide customers with higher levels of service quality, thus distinguishing them from their competitors, many of which do not use performance measurement so effectively.

Finally, I trust that the government agencies dealing with municipalities will be able to benefit from the recommendations aimed at helping elected officials and managers to improve their municipalities.

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APPENDICES

APPENDIX 1 - Guide for pre-test interviews

Pré-teste do "Survey" - **Determinantes da Eficácia da Medição do Desempenho**

Variável latente:

1. Apoio dos Interessados (Stakeholder Support)

Definições:

Interessados: pessoas que têm uma intervenção directa e/ou indirecta na implementação da medição do desempenho.

Medição do Desempenho: utilização de um sistema de medição para avaliar e para, consequentemente, melhorar o desempenho do Município, dos Dirigentes e dos trabalhadores (ex. SIADAP)

Questões a colocar:

1.1. Os Eleitos apoiam a utilização da medição do desempenho?
1.2. A maioria dos Dirigentes apoia a utilização da medição do desempenho?
1.3. O Governo exige a utilização da medição do desempenho?
1.4. A maioria dos Coordenadores apoia a utilização da medição do desempenho?
1.5. A maioria dos trabalhadores apoia a utilização da medição do desempenho?

Escala de avaliação:

1 = Discordo fortemente
2 = Discordo
3= Discordo um pouco
4 = Não sei
5 = Concordo um pouco
6 = Concordo
7 = Concordo plenamente

Variável latente:

2. Recursos intangíveis (Resources)

Definição:

Recursos: activos intangíveis (por oposição a equipamentos, edifícios) que influenciam a eficácia dos sistemas de medição do desempenho

Por favor, indique o grau de impacto de cada um destes recursos na eficácia do sistema de medição do desempenho do Município.com 0=comparativamente, sem impacto e 4= comparativamente, com impacto elevado

Recursos a avaliar:

2.1. A estrutura organizacional do Município (o modo como estão organizados os serviços).
2.2. Os valores, crenças, as atitudes e os comportamentos partilhados (a cultura do Município).

2.3. As políticas do Município para atrair, desenvolver e manter os melhores recursos humanos (por exemplo, recrutamento, compensação, incentivos, formação).
2.4. As relações estabelecidas e mantidas por Dirigentes e Trabalhadores com entidades externas, para benefício do Município (por exemplo, utentes, clientes, parceiros, fornecedores).
2.5. As competências, a criatividade e os conhecimentos globais dos Trabalhadores.
2.6. As competências, as qualificações e os conhecimentos dos Dirigentes e Coordenadores.
2.7. Tecnologias de informação adequadas para suportar a medição do desempenho

Escala de avaliação:

0 = Sem impacto
1 = Pouco impacto
2 = Algum impacto
3 = Grande impacto
4 = Elevado impacto

Variável latente:

3. Eficácia de gestão da medição do desempenho (Managerial effectiveness of performance measurement)

Definições:

Eficácia de gestão : o impacto que os sistemas de medição do desempenho têm nas decisões tomadas, de modo a melhorar a gestão e o governo democrático do Município

Medição do Desempenho: utilização de um sistema de medição para avaliar e para, consequentemente, melhorar o desempenho do Município, dos Dirigentes e dos trabalhadores

Questões a colocar:

3.1. Os resultados da medição do desempenho no Município são de confiança?
3.2. A medição do desempenho no Município pode ajudar os Dirigentes a tomarem melhores decisões?
3.3. A medição do desempenho no Município, ajuda a uma comunicação mais eficaz com os Eleitos?
3.4. A medição do desempenho no Município ajuda no planeamento o Orçamento e na tomada de decisões?
3.5. Os indicadores de desempenho reflectem com precisão a qualidade dos Dirigentes e Coordenadores?
3.6. Os indicadores de desempenho do Município são de confiança?
3.7. O investimento do Município na medição do desempenho é compensador?
3.8. A medição do desempenho no Município melhora a produtividade?
3.9. A medição do desempenho no Município motiva os trabalhadores?
3.10. A medição do desempenho no Município estimula a aprendizagem na organização?
3.11. Os resultados da medição do desempenho são utilizados no planeamento estratégico?

Escala de avaliação:

1 = Discordo fortemente
2 = Discordo
3= Discordo um pouco
4 = Não sei
5 = Concordo um pouco
6 = Concordo
7 = Concordo plenamente

Variável latente:

4. **Formação técnica (Technical Training)**

Definição:

Formação técnica: formação necessária para compreender, implementar e melhorar o sistema de medição do desempenho

Questões a colocar:

4.1. Em que medida foi prestada formação técnica em medição do desempenho aos técnicos com responsabilidade na medição do desempenho?
4.2. Em que medida foi prestada formação técnica em medição do desempenho aos Dirigentes e Coordenadores?
4.3. Em que medida foi prestada formação técnica em medição do desempenho aos Trabalhadores?
4.4. Em que medida foi prestada formação técnica em medição do desempenho aos Eleitos?

Escala de avaliação:

1 = Nenhuma formação
2 = Pouca formação
3 = Alguma formação
4 = Muita formação
5 = Formação extensiva

APPENDIX 2 - Pre-test questionnaire

PROJECTO DE INVESTIGAÇÃO

Determinantes da eficácia de gestão da medição do desempenho

Âmbito: Programa DBA - Doctor of Business Administration

Escola: ISCTE Business School - Instituto Universitário de Lisboa

Doutorando: Dr. João Ralha **Orientadora:** Prof.ª Dr.ª Carmen Lages

A sua resposta a este questionário não deverá demorar mais que 10 a 15 minutos.

Pretendemos compreender os factores que determinam a utilização de um sistema de medição de desempenho (e.g. SIADAP).

Não existem respostas certas ou erradas. Queremos conhecer a sua opinião.

Para que os resultados possam ser válidos responda, por favor, **a todas** as questões, com sinceridade. É garantida total **confidencialidade**. A análise incidirá apenas sobre dados agregados.

Ao responder às questões considere, por favor, a realidade do Município onde exerce funções.

Em compensação pela sua participação, habilita-se a um dos prémios a sortear entre os respondentes.

Agradecemos antecipadamente a sua participação.

Bragança, Outubro de 2009

Apoios ao projecto: ASSOCIAÇÃO DOS TÉCNICOS ADMINISTRATIVOS MUNICIPAIS; Significado

I. No que diz respeito à sua opinião sobre a **utilidade** dos sistemas de medição do desempenho, indique, por favor, em que medida discorda ou concorda com as seguintes afirmações:

	Discordo fortemente	Discordo	Discordo um pouco	Não concordo nem discordo	Concordo um pouco	Concordo	Concordo plenamente	NS/ NA*
1.1. A medição do desempenho no Município pode ajudar os Dirigentes a tomarem melhores decisões.	☐	☐	☐	☐	☐	☒	☐	☐
1.2. A medição do desempenho no Município ajuda a uma comunicação mais eficaz com os Eleitos.	☐	☒	☐	☐	☐	☐	☐	☐
1.3. A medição do desempenho no Município ajuda na planificação do Orçamento.	☐	☒	☐	☐	☐	☐	☐	☐
1.4. Os indicadores de desempenho reflectem a qualidade dos Dirigentes.	☐	☒	☐	☐	☐	☐	☐	☐
1.5. Os indicadores de desempenho reflectem a qualidade dos Coordenadores (Chefias).	☐	☒	☐	☐	☐	☐	☐	☐
1.6. Os indicadores de desempenho do Município são de confiança.	☐	☐	☐	☐	☐	☐	☐	☒
1.7. O investimento do Município na medição do desempenho vale a pena.	☐	☐	☐	☐	☐	☐	☐	☒
1.8. A medição do desempenho no Município melhora a produtividade.	☐	☐	☐	☐	☐	☐	☐	☒
1.9. A medição do desempenho no Município motiva os trabalhadores.	☐	☐	☐	☐	☐	☒	☐	☐
1.10. A medição do desempenho no Município estimula a aprendizagem da organização.	☐	☐	☐	☐	☐	☒	☐	☐
1.11. Os resultados da medição do desempenho são utilizados no planeamento estratégico.	☐	☐	☐	☐	☐	☐	☐	☒
1.12. Os resultados da medição do desempenho no Município são de confiança.	☐	☒	☐	☐	☐	☐	☐	☐
1.13. Outro. (Favor explicitar) _____	☐	☐	☐	☐	☐	☐	☐	☐

II. No que diz respeito ao **apoio dos Interessados**, entidades que têm uma intervenção directa e/ou indirecta na implementação da medição do desempenho, indique, por favor, em que medida discorda ou concorda com as seguintes afirmações.

	Discordo fortemente	Discordo	Discordo um pouco	Não concordo nem discordo	Concordo um pouco	Concordo	Concordo plenamente	NS/ NA*
2.1. Os Eleitos apoiam a utilização da medição do desempenho.	☐	☐	☐	☐	☐	☒	☐	☐
2.2. A maioria dos Dirigentes apoia a utilização da medição do desempenho.	☐	☐	☐	☐	☐	☒	☐	☐
2.3. A maioria dos Coordenadores (Chefias) apoia a utilização da medição do desempenho.	☐	☐	☐	☐	☐	☒	☐	☐
2.4. A maioria dos Trabalhadores apoia a utilização da medição do desempenho.	☐	☐	☐	☐	☐	☒	☐	☐
2.5. As organizações da Sociedade Civil (ex: colectividades, associações profissionais) apoiam a medição do desempenho	☐	☐	☐	☐	☐	☐	☐	☒
2.6. Os Munícipes apoiam a medição do desempenho.	☐	☐	☐	☐	☐	☐	☐	☒
2.7. Outro. (Favor explicitar) _____	☐	☐	☐	☐	☐	☐	☐	☐

2

*NS / NR – Não sei / Não se aplica

III. Qual o **grau de influência** de cada um dos seguintes recursos intangíveis (por exemplo, a estrutura organizacional) no sistema de medição do desempenho do seu Município?

	Nenhum	Muito pequeno	Pequeno	Neutro	Grande	Muito grande	Total	NS/ NA*
3.1. A estrutura organizacional (o modo como estão organizados os serviços) do Município .	☐	☐	☐	☒	☐	☐	☐	☐
3.2. A cultura do Município (os valores, crenças, atitudes e comportamentos).	☐	☐	☐	☒	☐	☐	☐	☐
3.3. As políticas do Município para conseguir os melhores recursos humanos (ex: recrutamento, compensação, incentivos, formação).	☐	☐	☐	☐	☒	☐	☐	☐
3.4. As relações desenvolvidas por Dirigentes e Trabalhadores com entidades externas (por exemplo, utentes, clientes, parceiros, Fornecedores) para benefício do Município.	☐	☐	☐	☐	☐	☒	☐	☐
3.5. As competências dos Trabalhadores.	☐	☐	☒	☐	☐	☐	☐	☐
3.6. As competências dos Dirigentes.	☐	☐	☐	☐	☒	☐	☐	☐
3.7. As competências dos Coordenadores (Chefias).	☐	☐	☐	☐	☒	☐	☐	☐
3.8. Os conhecimentos sobre tecnologias de informação para apoiar a medição do desempenho.	☐	☐	☒	☐	☐	☐	☐	☐
3.9. Outro. (Favor explicitar) _____	☐	☐	☐	☐	☐	☐	☐	☐

IV. Quanta formação técnica em "medição do desempenho" foi prestada aos seguintes intervenientes?

	Nenhuma formação	Pouca formação	Insuficiente formação	Neutro	Suficiente formação	Muita formação	Completa formação	NS/ NA*
4.1. Técnicos com responsabilidade na medição do desempenho.	☐	☒	☐	☐	☐	☐	☐	☐
4.2. Dirigentes.	☐	☐	☒	☐	☐	☐	☐	☐
4.3. Coordenadores (Chefias).	☐	☐	☒	☐	☐	☐	☐	☐
4.4. Trabalhadores.	☐	☐	☒	☐	☐	☐	☐	☐
4.5. Eleitos	☐	☐	☒	☐	☐	☐	☐	☐
4.6. Outro. (Favor explicitar) _____	☐	☐	☐	☐	☐	☐	☐	☐

NS / NA – Não sei / Não se aplica

3

V. Caracterização do respondente

	Até 30	31 - 40	41 - 50	51 - 60	Mais de 60			
5.1. Idade (anos)	☐	☐	☐	☒	☐			
	Feminino	Masculino						
5.2. Sexo	☒	☐						
	4º ano	6º ano	9º ano	12º ano	Bacharelato/ Licenciatura	Mestrado/ Doutoramento		
5.3. Habilitações literárias	☐	☐	☒	☐	☐	☐		
	Eleito	Dirigente	Técnico Superior	Coordenador (Chefia)	Assistente Técnico	Outras		
5.4. Cargo / Funções, exercidas no Município Em caso de "Outras" (favor explicitar): _____	☐	☒	☐	☐	☐	☐		
	Até 5	6 - 10	11 - 20	21 - 35	Mais de 35			
5.5. Antiguidade na carreira (anos)	☐	☐	☐	☐	☒			
	Menos 200	De 201 a 500	De 501 a 800	De 801 a 1.200	Mais de 1.200	NS/NA*		
5.6. Dimensão da organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	☒	☐	☐	☐	☐	☐		
	2006	2007	2008	2009	Não aplicado	NS/ NA*		
5.7. Ano de início de aplicação do SIADAP no Município	☐	☒	☐	☐	☐	☐		
	Sim	Não						
5.8. Formação em técnicas de Gestão Pública – frequência de cursos de Direcção e pós-graduações: GEPAL, CEFADAL, FORGEP, CADAP, etc.	☒	☐						
	Totalmente negativa	Negativa	Pouco negativa	Opinião Neutra	Pouco positiva	Positiva	Totalmente positiva	NS/ NA*
5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios?	☐	☐	☐	☐	☒	☐	☐	☐

**NS / NA – Não sei / Não se aplica*

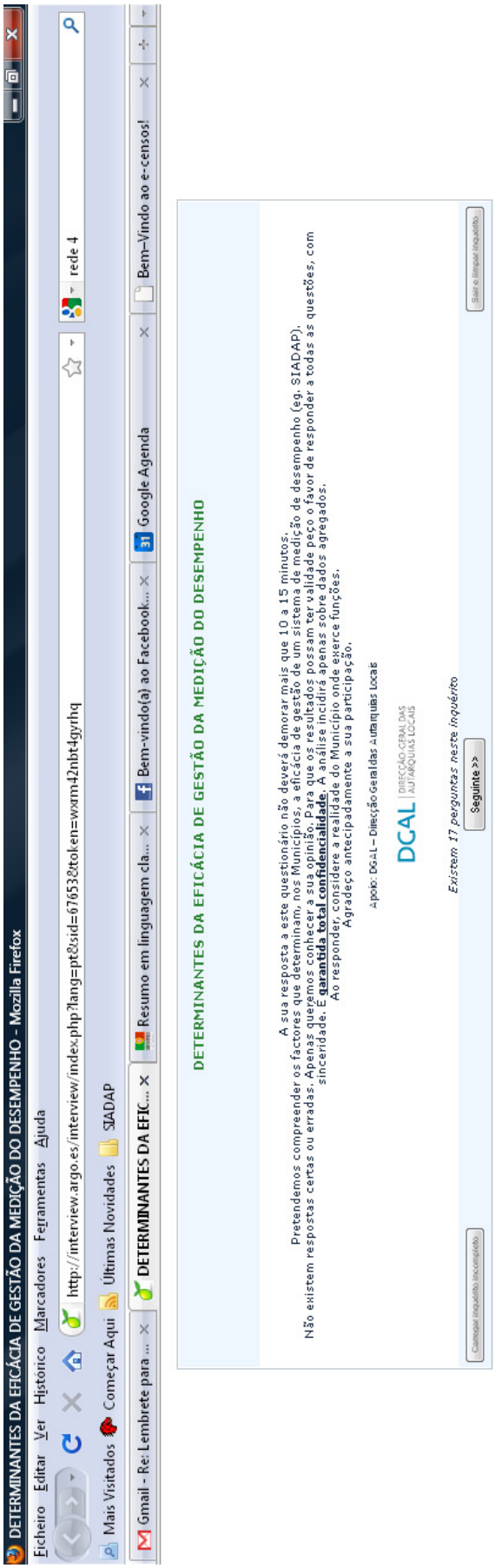
Município *(onde exerce funções):* Município de Aguiar da Beira 01

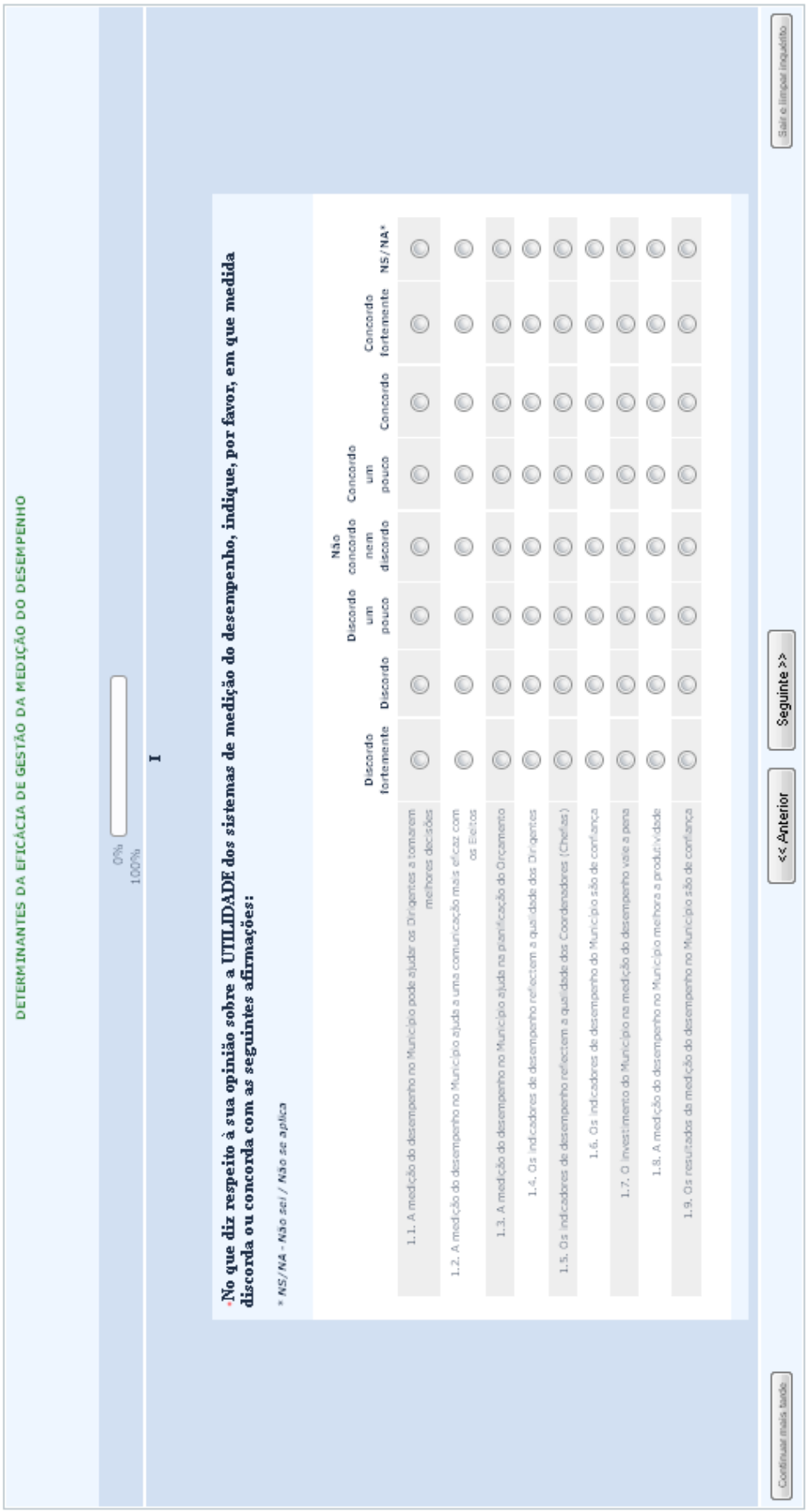
Observações (comentários/esclarecimentos que entenda adequados para este estudo):

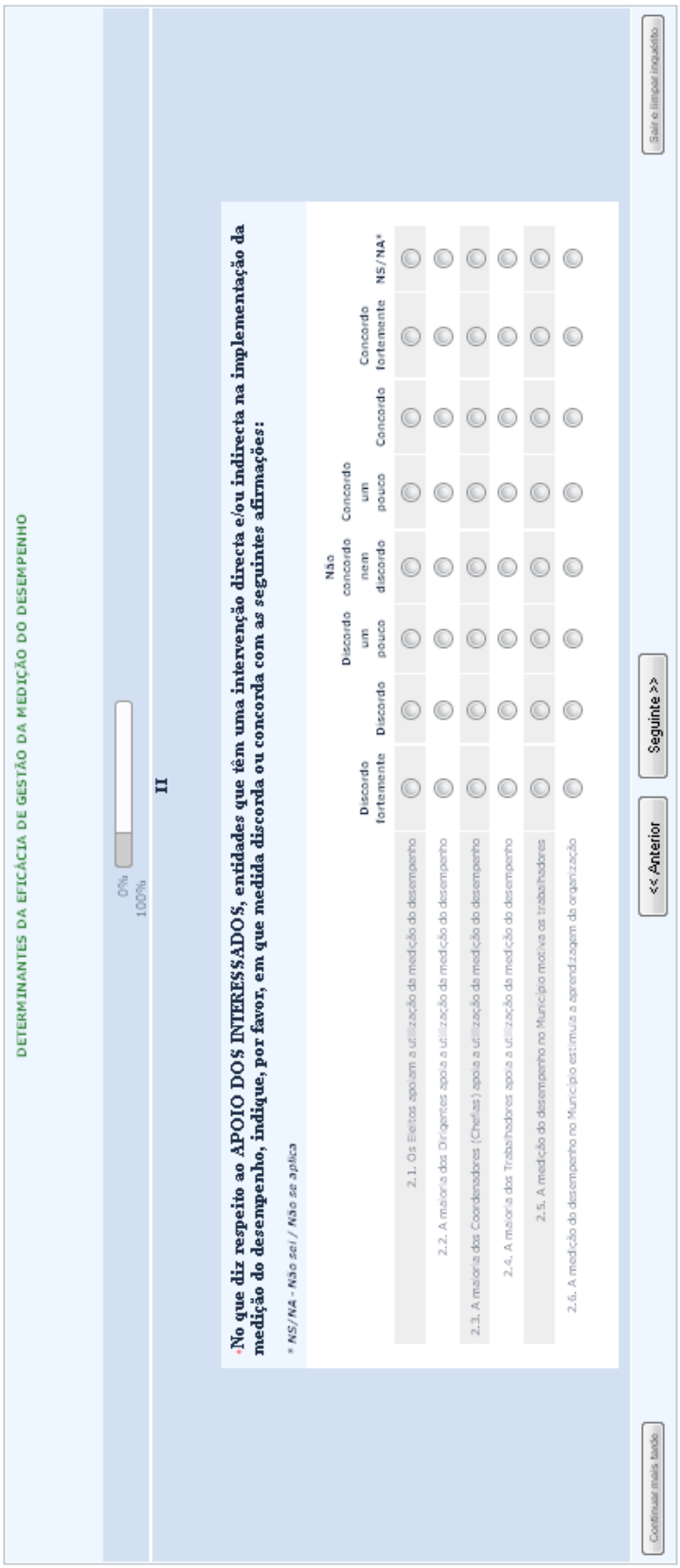
Verifique, por favor, se respondeu a todas as questões.
Os nossos agradecimentos pela sua colaboração.

4

APPENDIX 3 - Final online questionnaire


DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO - Mozilla Firefox
Ficheiro Editar Ver Historico Marcadores Ferramentas Ajuda
http://interview.argo.es/interview/index.php?lang=pt&sid=67653&token=wxm42nbt4gyrhq
rede 4
Mais Visitados Começar Aqui Últimas Novidades SIADAP
Gmail - Re: Lembrete para ... DETERMINANTES DA EFIC... Resumo em linguagem cla... Bem-vindo(a) ao Facebook... Google Agenda Bem-Vindo ao e-censos!
DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO
A sua resposta a este questionário não deverá demorar mais que 10 a 15 minutos.
Pretendemos compreender os factores que determinam, nos Municípios, a eficácia de gestão de um sistema de medição de desempenho (eg. SIADAP).
Não existem respostas certas ou erradas. Apenas queremos conhecer a sua opinião. Para que os resultados possam ter validade peço o favor de responder a todas as questões, com sinceridade. É garantida total confidencialidade. A análise incidirá apenas sobre dados agregados.
Ao responder, considere a realidade do Município onde exerce funções.
Agradeço antecipadamente a sua participação.
Apoio: DGAL – Direcção Geral das Autarquias Locais
DGAL DIRECÇÃO-GERAL DAS AUTARQUIAS LOCAIS
Existem 17 perguntas neste inquérito
Seguinte >>
Começar inquérito incompleto
Sair e limpar inquérito


DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO
0%
100%
I
No que diz respeito à sua opinião sobre a UTILIDADE dos sistemas de medição do desempenho, indique, por favor, em que medida discorda ou concorda com as seguintes afirmações:
* NS/NA - Não sei / Não se aplica
Discordo fortemente
Discordo
Discordo um pouco
Não concordo nem discordo
Concordo um pouco
Concordo
Concordo fortemente
NS/NA*
1.1. A medição do desempenho no Município pode ajudar os Dirigentes a tomarem melhores decisões
1.2. A medição do desempenho no Município ajuda a uma comunicação mais eficaz com os Eleitos
1.3. A medição do desempenho no Município ajuda na planificação do Orçamento
1.4. Os indicadores de desempenho reflectem a qualidade dos Dirigentes
1.5. Os indicadores de desempenho reflectem a qualidade dos Coordenadores (Chefias)
1.6. Os indicadores de desempenho do Município são de confiança
1.7. O investimento do Município na medição do desempenho vale a pena
1.8. A medição do desempenho no Município melhora a produtividade
1.9. Os resultados da medição do desempenho no Município são de confiança
<< Anterior
Seguinte >>
Continuar mais tarde
Sair e limpar inquérito


DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO
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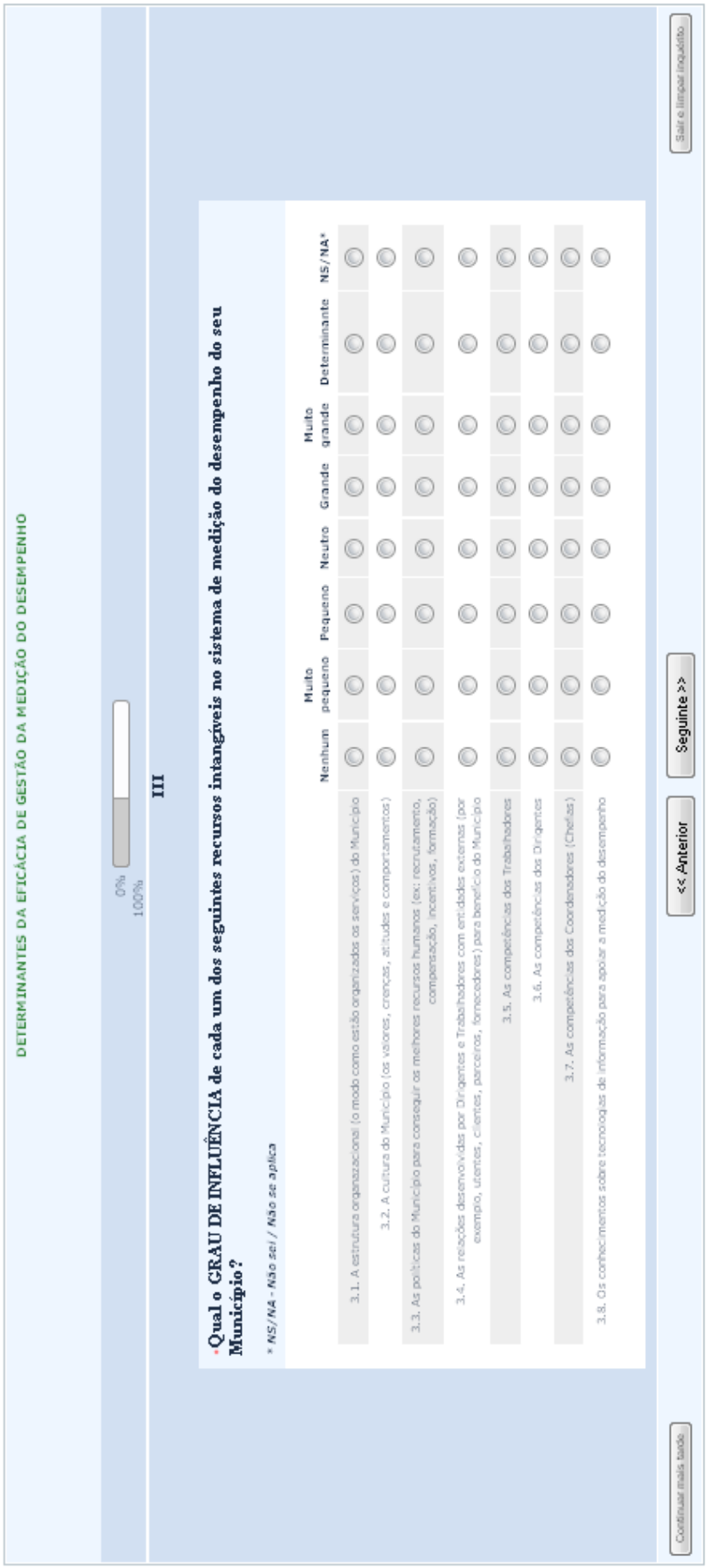
II
*No que diz respeito ao APOIO DOS INTERESSADOS, entidades que têm uma intervenção directa e/ou indirecta na implementação da medição do desempenho, indique, por favor, em que medida discorda ou concorda com as seguintes afirmações:
* NS/NA - Não sei / Não se aplica
Discordo fortemente
Discordo
Discordo um pouco
Não concordo nem discordo
Concordo um pouco
Concordo
Concordo fortemente
NS/NA*
2.1. Os Eleitos apoiam a utilização da medição do desempenho
2.2. A maioria dos Dirigentes apoia a utilização da medição do desempenho
2.3. A maioria dos Coordenadores (Chefias) apoia a utilização da medição do desempenho
2.4. A maioria dos Trabalhadores apoia a utilização da medição do desempenho
2.5. A medição do desempenho no Município motiva os trabalhadores
2.6. A medição do desempenho no Município estimula a aprendizagem da organização
<< Anterior
Seguinte >>
Continuar mais tarde
Sair e limpar inquérito


DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO
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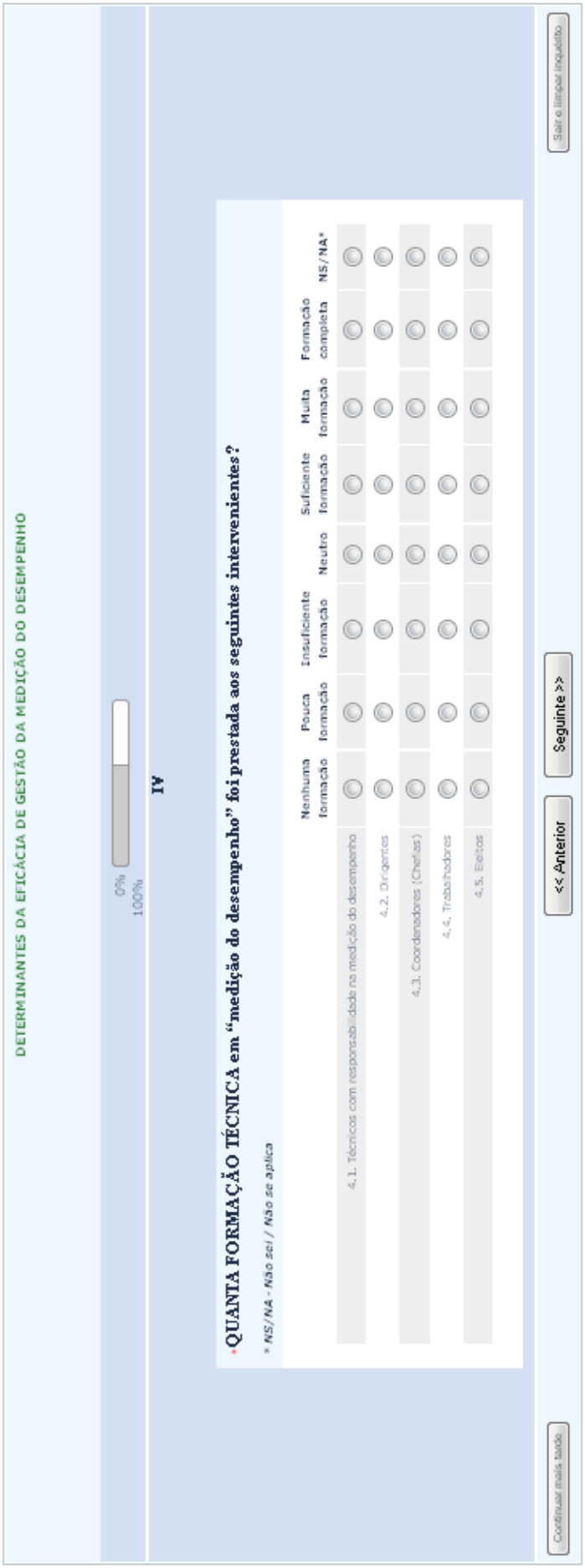
III
Qual o GRAU DE INFLUÊNCIA de cada um dos seguintes recursos intangíveis no sistema de medição do desempenho do seu Município?
* NS/NA - Não sei / Não se aplica
Nenhum
Muito pequeno
Pequeno
Neutro
Grande
Muito grande
Determinante
NS/NA*
3.1. A estrutura organizacional (o modo como estão organizados os serviços) do Município
3.2. A cultura do Município (os valores, crenças, atitudes e comportamentos)
3.3. As políticas do Município para conseguir os melhores recursos humanos (ex: recrutamento, compensação, incentivos, formação)
3.4. As relações desenvolvidas por Dirigentes e Trabalhadores com entidades externas (por exemplo, utentes, clientes, parceiros, fornecedores) para benefício do Município
3.5. As competências dos Trabalhadores
3.6. As competências dos Dirigentes
3.7. As competências dos Coordenadores (Chefias)
3.8. Os conhecimentos sobre tecnologias de informação para apoiar a medição do desempenho
<< Anterior
Seguinte >>
Continuar mais tarde
Sair e limpar inquérito


DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO
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100%
IV
QUANTA FORMAÇÃO TÉCNICA em "medição do desempenho" foi prestada aos seguintes intervenientes?
* NS/NA - Não sei / Não se aplica
Nenhuma formação
Pouca formação
Insuficiente formação
Neutro
Suficiente formação
Muita formação
Formação completa
NS/NA*
4.1. Técnicos com responsabilidade na medição do desempenho
4.2. Dirigentes
4.3. Coordenadores (Chefias)
4.4. Trabalhadores
4.5. Eleitos
<< Anterior
Seguinte >>
Continuar mais tarde
Sair e limpar inquérito

DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO

0%
100%

Caracterização do respondente:

Caracterização do respondente:

*Idade (anos)
Escolha uma das seguintes respostas
- Até 30
- 31-40
- 41-50
- 51-60
- Mais de 60

*Sexo
Escolha uma das seguintes respostas
- Feminino
- Masculino

*Habilitações literárias
Escolha uma das seguintes respostas
- 4ºano
- 6ºano
- 9ºano
- 12ºano
- Bacharelato/Licenciatura
- Mestrado/Doutoramento

* Cargo/Funções, exercidas no Município:
Escolha uma das seguintes respostas
- Eleito
- Dirigente
- Técnico Superior
- Coordenador (Chefia)
- Assistente Tecnico
- Outras

*Antiguidade na carreira (anos)
Escolha uma das seguintes respostas
- Até 5
- 6-10
- 11-20
- 21-35
- Mais de 35

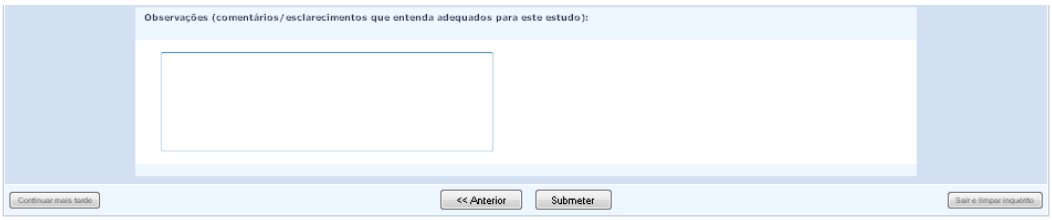
*Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções
* NS/NA - Não sei / Não se aplica
Escolha uma das seguintes respostas
- Menos 200
- De 201 a 500
- De 501 a 800
- De 801 a 1200
- Mais de 1200
- NS/NA*

*Ano de início de aplicação do SIADAP no Município
* NS/NA - Não sei / Não se aplica
Escolha uma das seguintes respostas
- 2006
- 2007
- 2008
- 2009
- Não aplicado
- NS/NA*

*Formação em técnicas de Gestão Pública – frequência de cursos de Direcção e pós-graduações: GEPAL, CEFADAL, FORGEP CADAP, etc.
Escolha uma das seguintes respostas
- Sim
- Não

*Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios?
* NS/NA - Não sei / Não se aplica
Escolha uma das seguintes respostas
- Totalmente negativa
- Negativa
- Pouco negativa
- Opinião Neutra
- Pouco positiva
- Positiva
- Totalmente positiva
- NS/NA*

Município (onde exerce funções):


Observações (comentários/esclarecimentos que entenda adequados para este estudo):
Continuar mais tarde
<< Anterior
Submeter
Sair e limpar inquérito

APPENDIX 4 - e-mails asking for participation

1st e-mail – Asking for participation

Assunto: Projecto de Investigação **"Determinantes da eficácia de gestão da medição do desempenho"**

Programa de Doutoramento "Doctor of Business Administration" - ISCTE *Business School* / Instituto Universitário de Lisboa

Caro (a) Sr. (a)

Venho pela presente solicitar a sua disponibilidade para colaborar no meu projecto de investigação, cujo objecto de estudo são os **Municípios Portugueses** e para o qual disponho do apoio da **DGAL** – Direcção Geral das Autarquias Locais.

Para tal, peço-lhe o favor de preencher o questionário electrónico cuja ligação lhe será remetida, amanhã, por e-mail.

Todos os dados obtidos serão tratados de modo agregado, sendo assegurada **total confidencialidade**.

Com os meus agradecimentos e melhores cumprimentos,

João Ralha

Doutorando em Gestão – Programa DBA – Doctor of Business Administration"

Tlm. 93 261 21 06

2nd e-mail – with link for online questionnaire and instructions

Caro(a) Participante,

Ontem convidei-o a colaborar no projecto de investigação para a minha tese de doutoramento no programa "Doctor of Business Administration" da ISCTE Business School – Instituto Universitário de Lisboa

O inquérito electrónico tem o título:
"**DETERMINANTES DA EFICÁCIA DE GESTÃO DA MEDIÇÃO DO DESEMPENHO**"

No preenchimento do inquérito deverá ter em atenção o seguinte:

- De cada vez que não responder a uma questão será avisado(a) através de uma mensagem e o texto da respectiva questão fica a vermelho;
- Na parte inferior de cada página deverá utilizar os botões *"Anterior"* e *"Seguinte"* para retroceder de página ou avançar para a página seguinte;
- Se desejar interromper o preenchimento do inquérito e retomá-lo mais tarde deverá utilizar o botão *"Terminar mais tarde";*
- Se pretender apagar todas as respostas dadas utilize o botão *Sair e limpar inquérito".*

Para participar no inquérito, por favor utilize o *link* abaixo.

Com os meus agradecimentos e melhores cumprimentos,

João Ralha

Cover for online questionnaire

A sua resposta a este questionário não deverá demorar mais que 10 a 15 minutos.

Pretendemos compreender os factores que determinam, nos Municípios, a eficácia de gestão de um sistema de medição de desempenho (eg. SIADAP).

Não existem respostas certas ou erradas. Apenas queremos conhecer a sua opinião. Para que os resultados possam ter validade peço o favor de responder a todas as questões, com sinceridade. É **garantida total confidencialidade**. A análise incidirá apenas sobre dados agregados.

Ao responder, considere a realidade do Município onde exerce funções.

Agradeço antecipadamente a sua participação.

Apoio: DGAL – Direcção Geral das Autarquias Locais – logótipo

APPENDIX 5 - Data cleaning

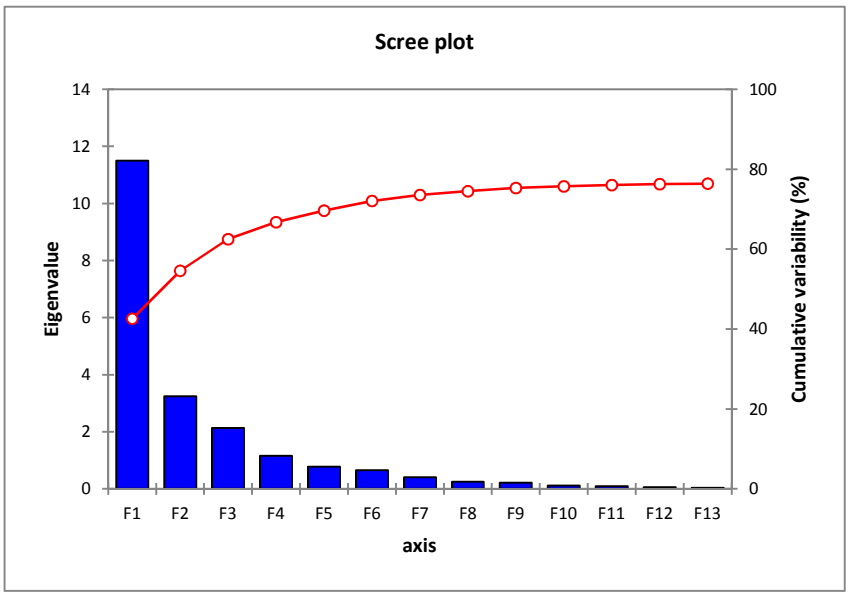
Data Cleaning

Variables		Mean	Standard Deviation	Missing count	Percent Missings
Managerial Effectiveness of performance measurement					
Q1_1	The Municipality´s performance measurement can help managers make better decisions	5,910	1,077	0	0
Q1_2	The Municipality´s performance measurement helps communicate more effectively with elected officials	5,340	1,401	0	0
Q1_3	The Municipality´s performance measurement helps budget planning and decision making	5,530	1,404	1	0,7
Q1_4	The Municipality´s performance indicators accurately reflect the quality of management	5,200	1,424	0	0
Q1_5	The Municipality´s performance indicators accurately reflect the quality of supervisors	5,270	1,380	0	0
Q1_6	The Municipality´s performance indicators are reliable	5,100	1,347	0	0
Q1_7	The Municipality´s investment on performance management is worthwhile	5,700	1,248	0	0
Q1_8	The Municipality´s performance measurement improves productivity	5,640	1,232	0	0
Q1_9	The Municipality´s performance measurement results can be trusted	5,150	1,334	0	0
Stakeholders Support					
Q2_1	Elected officials support the use of performance measurement	5,390	1,426	2	1,4
Q2_2	Most managers support the use of performance measurement	5,350	1,428	0	0
Q2_3	Most supervisors support the use of performance measurement	5,290	1,352	0	0
Q2_4	Most employees support the use of performance measurement	4,540	1,495	0	0
Q2_5	Performance measurement motivates employees	4,530	1,576	0	0
Intangible Resources					
Q3_1	The organizational structure (i.e., the operating and reporting structure) of the Municipality	4,850	1,194	1	0,7
Q3_2	The Municipality culture (i.e., values, beliefs, attitudes, and behaviors)	4,920	1,329	0	0
Q3_3	The municipal policies designed to have the best human resources e.g., recruitment, compensation, reward, training)	5,050	1,275	0	0
Q3_4	Relationships that employees and managers have established and maintained with external constituents (e.g., customers, strategic alliances, suppliers) for the benefit of the Municipality	5,070	1,095	0	0
Q3_5	The skills and know-how of workers	5,400	1,057	0	0
Q3_6	The skills and know-how of managers	5,550	1,114	0	0
Q3_7	The skills and know-how of supervisors	5,530	1,109	0	0
Q3_8	The skills and know-how on information systems to support performance measurement	5,140	1,128	0	0
Technical Training					
Q4_1	How much technical training has been provided to performance management staff	4,480	1,332	3	2,2
Q4_2	How much technical training has been provided to managers	4,520	1,280	0	0
Q4_3	How much technical training has been provided to supervisors	4,540	1,285	0	0
Q4_4	How much technical training has been provided to workers	3,920	1,367	2	1,4
Q4_5	How much technical training has been provided to elected officials	4,090	1,465	9	6,5

APPENDIX 6 – Common method bias – exploratory factor analysis

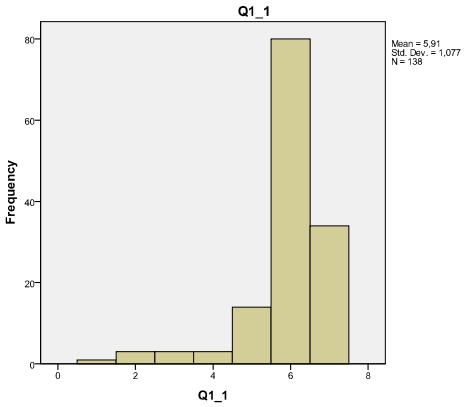
Eigenvalues:

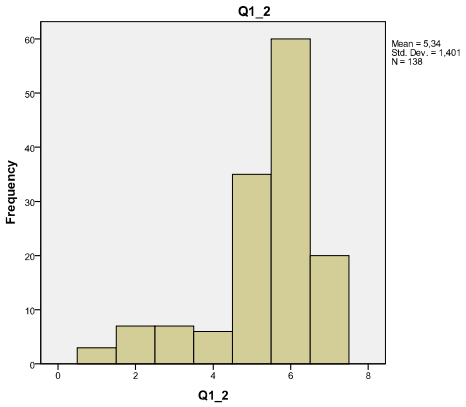
	F1	F2	F3	F4
Eigenvalue	11.502	3.241	2.131	1.153
Variability (%)	42.601	12.004	7.891	4.270
Cumulative %	42.601	54.605	62.496	66.766

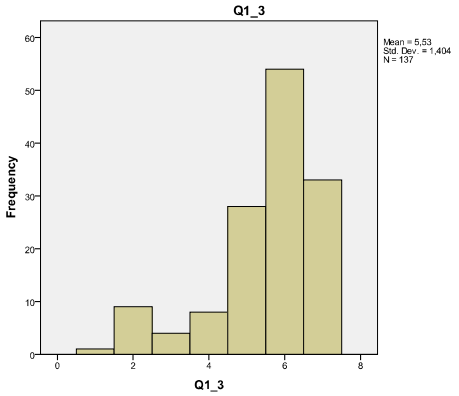


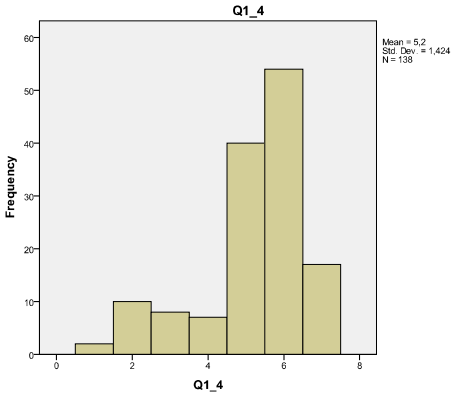
APPENDIX 7 – Histograms and normality test

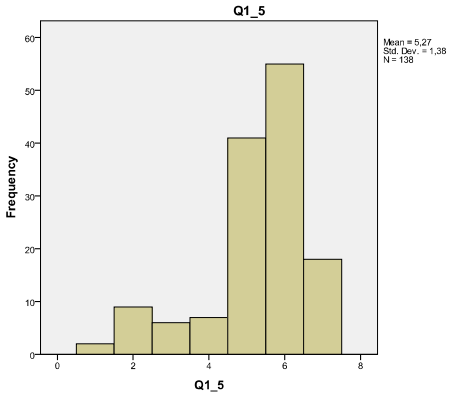
Construct: Managerial effectiveness of performance measurement

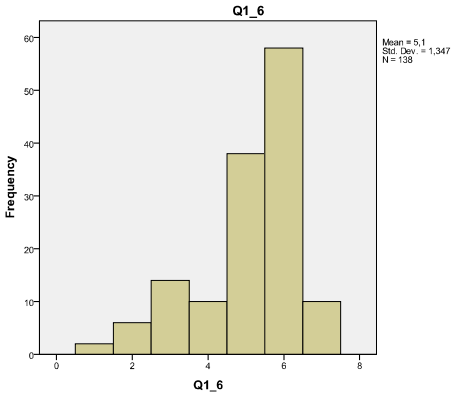


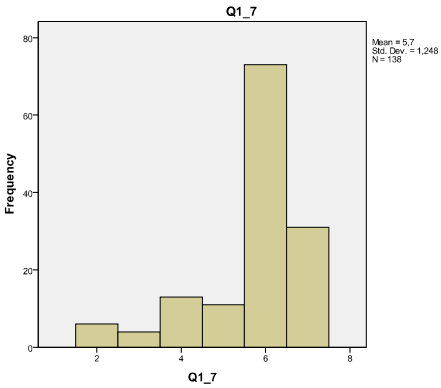


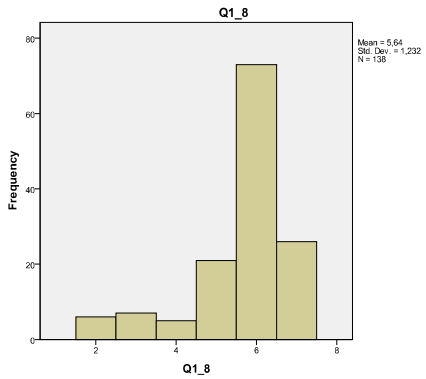


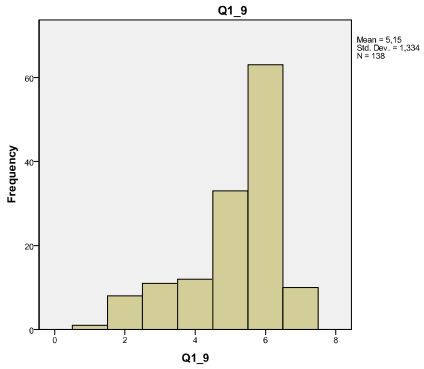




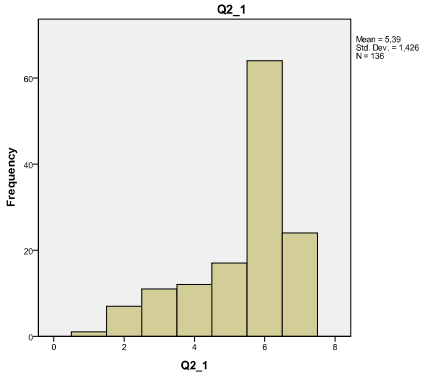


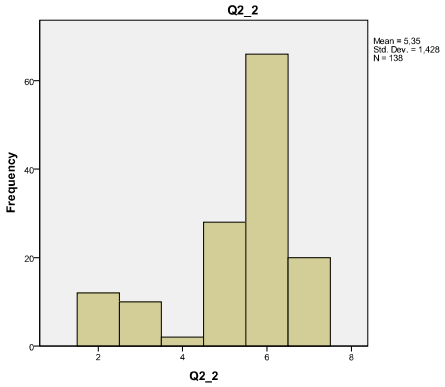


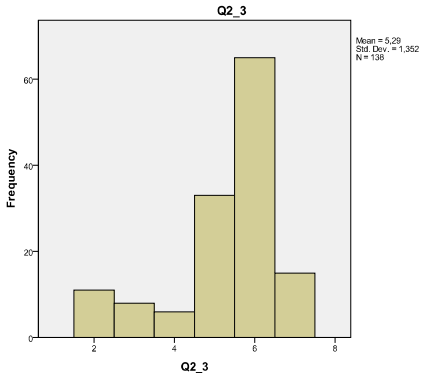


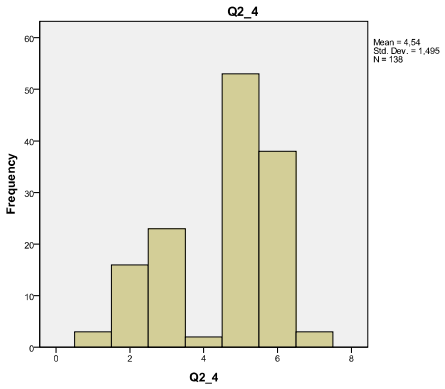


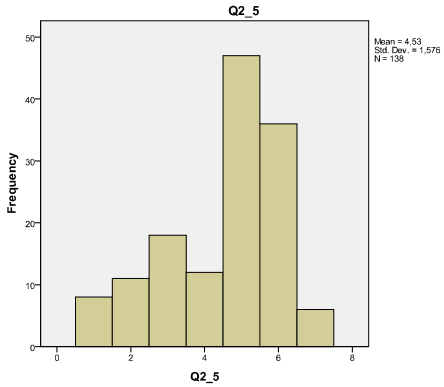
Construct: Stakeholders' support



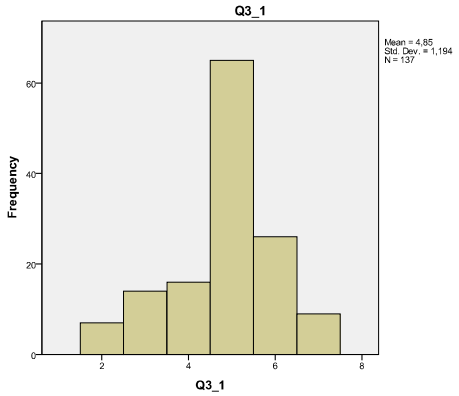


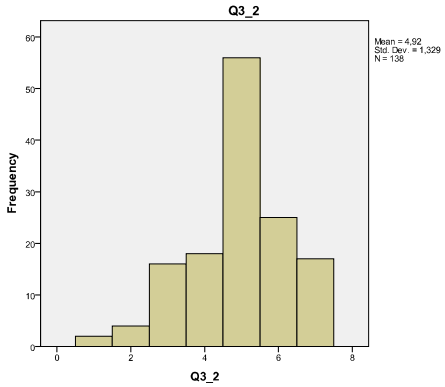


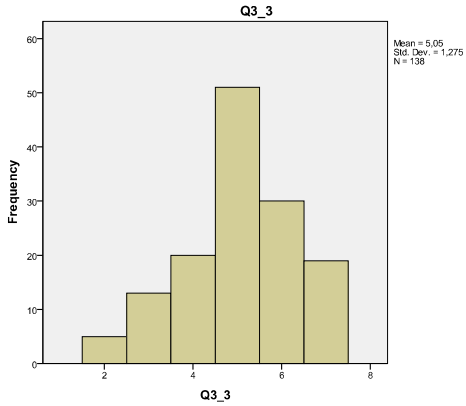


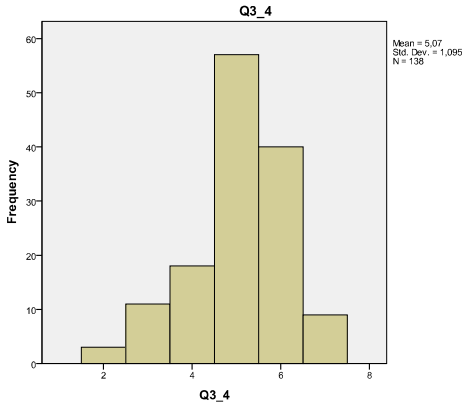


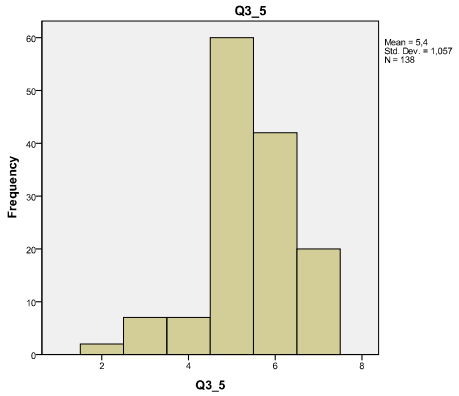
Construct: Intangible resources

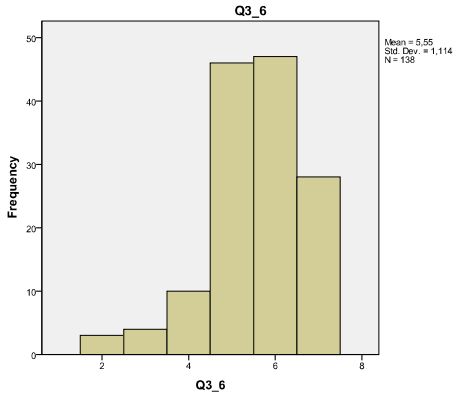


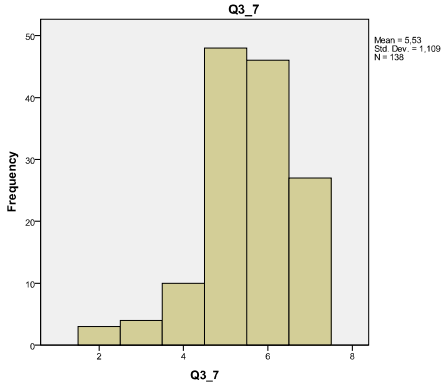


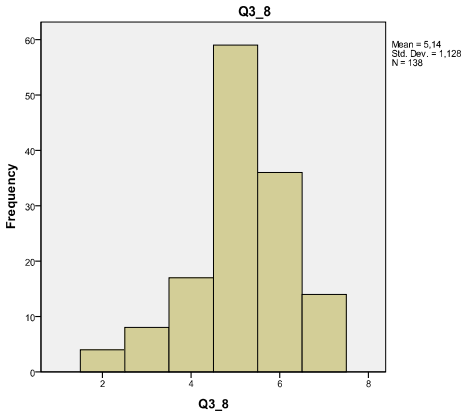




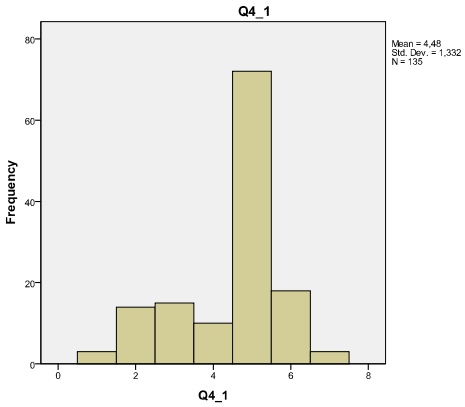


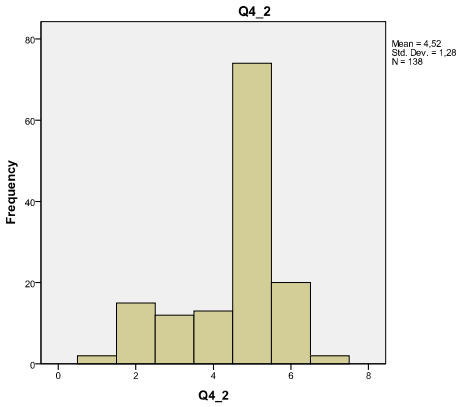


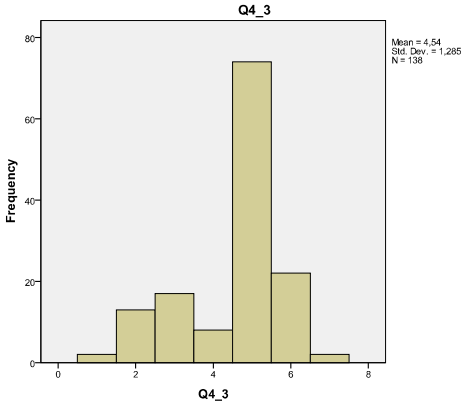


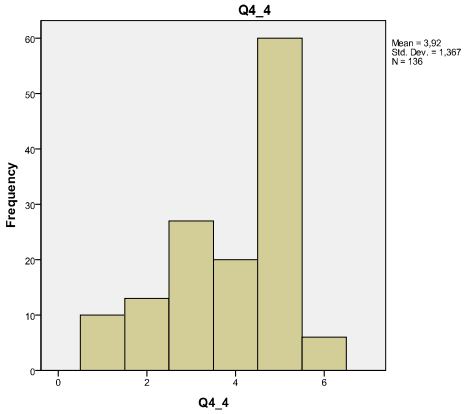


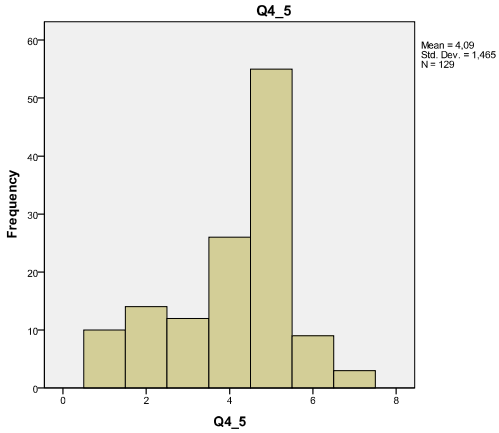
Construct: Technical training











Tests of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
1.1. A medição do desempenho no Município pode ajudar os Dirigentes a tomarem melhores decisões	,353	123	,000	,711	123	,000
1.2. A medição do desempenho no Município ajuda a uma comunicação mais eficaz com os Eleitos	,265	123	,000	,816	123	,000
1.3. A medição do desempenho no Município ajuda na planificação do Orçamento	,264	123	,000	,825	123	,000
1.4. Os indicadores de desempenho reflectem a qualidade dos Dirigentes	,245	123	,000	,833	123	,000
1.5. Os indicadores de desempenho reflectem a qualidade dos Coordenadores (Chefias)	,248	123	,000	,824	123	,000
1.6. Os indicadores de desempenho do Município são de confiança	,256	123	,000	,830	123	,000
1.7. O investimento do Município na medição do desempenho vale a pena	,364	123	,000	,755	123	,000
1.8. A medição do desempenho no Município melhora a produtividade	,345	123	,000	,763	123	,000
1.9. Os resultados da medição do desempenho no Município são de confiança	,286	123	,000	,813	123	,000
2.1. Os Eleitos apoiam a utilização da medição do desempenho	,311	123	,000	,831	123	,000
2.2. A maioria dos Dirigentes apoia a utilização da medição do desempenho	,306	123	,000	,786	123	,000
2.3. A maioria dos Coordenadores (Chefias) apoia a utilização da medição do desempenho	,302	123	,000	,793	123	,000
2.4. A maioria dos Trabalhadores apoia a utilização da medição do desempenho	,305	123	,000	,852	123	,000
2.5. A medição do desempenho no Município motiva os trabalhadores	,258	123	,000	,888	123	,000
2.6. A medição do desempenho no Município estimula a aprendizagem da organização	,273	123	,000	,821	123	,000
3.1. A estrutura organazacional (o modo como estão organizados os serviços) do Município	,285	123	,000	,887	123	,000
3.2. A cultura do Município (os valores, crenças, atitudes e comportamentos)	,215	123	,000	,919	123	,000
3.3. As políticas do Município para conseguir os melhores recursos humanos (ex: recrutamento, compensação, incentivos, formação)	,209	123	,000	,917	123	,000
3.4. As relações desenvolvidas por Dirigentes e Trabalhadores com entidades externas (por exemplo, utentes, clientes, parceiros, fornecedores) para benefício do Município	,239	123	,000	,901	123	,000
3.5. As competências dos Trabalhadores	,249	123	,000	,860	123	,000
3.6. As competências dos Dirigentes	,194	123	,000	,878	123	,000
3.7. As competências dos Coordenadores (Chefias)	,201	123	,000	,878	123	,000
3.8. Os conhecimentos sobre tecnologias de informação para apoiar a medição do desempenho	,246	123	,000	,894	123	,000
4.1. Técnicos com responsabilidade na medição do desempenho	,336	123	,000	,842	123	,000
4.2. Dirigentes	,343	123	,000	,824	123	,000
4.3. Coordenadores (Chefias)	,350	123	,000	,825	123	,000
4.4. Trabalhadores	,267	123	,000	,856	123	,000
4.5. Eleitos	,251	123	,000	,873	123	,000

a. Lilliefors Significance Correction

APPENDIX 8 - Caractherization variables : cross tabulations

Table 5.2

5.4. Cargo/Funções, exercidas no Município: * 5.2. Sexo Crosstabulation

			5.2. Sexo		Total
			Feminino	Masculino	
5.4. Cargo/Funções, exercidas no Município:	Eleito	Count	14	33	47
		% within 5.4. Cargo/Funções, exercidas no Município:	29,8%	70,2%	100,0%
	Dirigente	Count	36	51	87
		% within 5.4. Cargo/Funções, exercidas no Município:	41,4%	58,6%	100,0%
	Técnico Superior	Count	2	3	5
		% within 5.4. Cargo/Funções, exercidas no Município:	40,0%	60,0%	100,0%
	Coordenador (Chefia)	Count	4	7	11
		% within 5.4. Cargo/Funções, exercidas no Município:	36,4%	63,6%	100,0%
	Outras	Count	1	1	2
		% within 5.4. Cargo/Funções, exercidas no Município:	50,0%	50,0%	100,0%
Total		Count	57	95	152
		% within 5.4. Cargo/Funções, exercidas no Município:	37,5%	62,5%	100,0%

Table 5.4

5.3. Habilitações literárias * 1.7. O investimento do Município na medição do desempenho vale a pena Crosstabulation

			1.7. O investimento do Município na medição do desempenho vale a pena						
			Discordo	Discordo um pouco	Não concordo nem discordo	Concordo um pouco	Concordo	Concordo fortemente	Total
5.3. Habilitações literárias	6ºano	Count	0	0	0	0	0	1	1
		% within 5.3. Habilitações literárias	,0%	,0%	,0%	,0%	,0%	100,0%	100,0%
	9ºano	Count	0	0	0	0	1	0	1
		% within 5.3. Habilitações literárias	,0%	,0%	,0%	,0%	100,0%	,0%	100,0%
	12ºano	Count	0	0	0	2	8	1	11
		% within 5.3. Habilitações literárias	,0%	,0%	,0%	18,2%	72,7%	9,1%	100,0%
	Bacharelato/Licenciatura	Count	7	4	13	12	61	21	118
		% within 5.3. Habilitações literárias	5,9%	3,4%	11,0%	10,2%	51,7%	17,8%	100,0%
	Mestrado/Doutoramento	Count	0	0	0	0	9	10	19
		% within 5.3. Habilitações literárias	,0%	,0%	,0%	,0%	47,4%	52,6%	100,0%
Total		Count	7	4	13	14	79	33	150
		% within 5.3. Habilitações literárias	4,7%	2,7%	8,7%	9,3%	52,7%	22,0%	100,0%

Table 5.5

5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções * 5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios? Crosstabulation

			5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios?							
			Totalmente negativa	Negativa	Pouco negativa	Opinião Neutra	Pouco positiva	Positiva	Totalmente positiva	Total
5.6. Dimensão na organização (em n.º de trabalhadores) do Municipio onde exerce o seu cargo/funções	Menos 200	Count	1	5	2	3	8	17	2	38
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Municipio onde exerce o seu cargo/funções	2,6%	13,2%	5,3%	7,9%	21,1%	44,7%	5,3%	100,0%
	De 201 a 500	Count	1	3	3	8	22	16	0	53
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Municipio onde exerce o seu cargo/funções	1,9%	5,7%	5,7%	15,1%	41,5%	30,2%	,0%	100,0%
	De 501 a 800	Count	0	1	1	1	6	10	1	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Municipio onde exerce o seu cargo/funções	,0%	5,0%	5,0%	5,0%	30,0%	50,0%	5,0%	100,0%
	De 801 a 1200	Count	2	3	0	0	6	8	1	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Municipio onde exerce o seu cargo/funções	10,0%	15,0%	,0%	,0%	30,0%	40,0%	5,0%	100,0%
	Mais de 1200	Count	0	1	1	0	7	10	0	19
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Municipio onde exerce o seu cargo/funções	,0%	5,3%	5,3%	,0%	36,8%	52,6%	,0%	100,0%
Total		Count	4	13	7	12	49	61	4	150
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Municipio onde exerce o seu cargo/funções	2,7%	8,7%	4,7%	8,0%	32,7%	40,7%	2,7%	100,0%

Table 5.7

5.4. Cargo/Funções, exercidas no Município: * 5.8. Formação em técnicas de Gestão Pública - frequência de cursos de Direcção e pós-graduações: GEPAL, CEFADAL, FORGEP CADAP, etc. Crosstabulation

			5.8. Formação em técnicas de Gestão Pública - frequência de cursos de Direcção e pós-graduações: GEPAL, CEFADAL, FORGEP CADAP, etc.		
			Sim	Não	Total
5.4. Cargo/Funções, exercidas no Município:	Eleito	Count	5	42	47
		% within 5.4. Cargo/Funções, exercidas no Município:	10,6%	89,4%	100,0%
	Dirigente	Count	44	43	87
		% within 5.4. Cargo/Funções, exercidas no Município:	50,6%	49,4%	100,0%
	Técnico Superior	Count	2	3	5
		% within 5.4. Cargo/Funções, exercidas no Município:	40,0%	60,0%	100,0%
	Coordenador (Chefia)	Count	3	8	11
		% within 5.4. Cargo/Funções, exercidas no Município:	27,3%	72,7%	100,0%
	Outras	Count	1	1	2
		% within 5.4. Cargo/Funções, exercidas no Município:	50,0%	50,0%	100,0%
Total		Count	55	97	152
		% within 5.4. Cargo/Funções, exercidas no Município:	36,2%	63,8%	100,0%

Other cross-tabulations

5.4. Cargo/Funções, exercidas no Município: * 5.3. Habilitações literárias Crosstabulation

			5.3. Habilitações literárias					
			6ºano	9ºano	12ºano	Bacharelato/Licenciatura	Mestrado/Doutoramento	Total
5.4. Cargo/Funções, exercidas no Município:	Eleito	Count	1	1	5	35	5	47
		% within 5.4. Cargo/Funções, exercidas no Município:	2,1%	2,1%	10,6%	74,5%	10,6%	100,0%
	Dirigente	Count	0	0	5	71	11	87
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	5,7%	81,6%	12,6%	100,0%
	Técnico Superior	Count	0	0	0	5	0	5
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	,0%	100,0%	,0%	100,0%
	Coordenador (Chefia)	Count	0	0	1	7	3	11
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	9,1%	63,6%	27,3%	100,0%
	Outras	Count	0	0	0	2	0	2
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	,0%	100,0%	,0%	100,0%
Total		Count	1	1	11	120	19	152
		% within 5.4. Cargo/Funções, exercidas no Município:	,7%	,7%	7,2%	78,9%	12,5%	100,0%

5.4. Cargo/Funções, exercidas no Município: * 5.5. Antiguidade na carreira (anos) Crosstabulation

			5.5. Antiguidade na carreira (anos)					
			Até 5	6-10	11-20	21-35	Mais de 35	Total
5.4. Cargo/Funções, exercidas no Município:	Eleito	Count	25	8	9	5	0	47
		% within 5.4. Cargo/Funções, exercidas no Município:	53,2%	17,0%	19,1%	10,6%	,0%	100,0%
	Dirigente	Count	5	21	28	27	6	87
		% within 5.4. Cargo/Funções, exercidas no Município:	5,7%	24,1%	32,2%	31,0%	6,9%	100,0%
	Técnico Superior	Count	2	1	2	0	0	5
		% within 5.4. Cargo/Funções, exercidas no Município:	40,0%	20,0%	40,0%	,0%	,0%	100,0%
	Coordenador (Chefia)	Count	1	0	6	4	0	11
		% within 5.4. Cargo/Funções, exercidas no Município:	9,1%	,0%	54,5%	36,4%	,0%	100,0%
	Outras	Count	2	0	0	0	0	2
		% within 5.4. Cargo/Funções, exercidas no Município:	100,0%	,0%	,0%	,0%	,0%	100,0%
Total		Count	35	30	45	36	6	152
		% within 5.4. Cargo/Funções, exercidas no Município:	23,0%	19,7%	29,6%	23,7%	3,9%	100,0%

5.4. Cargo/Funções, exercidas no Município: * 5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios? Crosstabulation

			5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios?							
			Totalmente negativa	Negativa	Pouco negativa	Opinião Neutra	Pouco positiva	Positiva	Totalmente positiva	Total
5.4. Cargo/Funções, exercidas no Município:	Eleito	Count	2	6	1	4	12	21	1	47
		% within 5.4. Cargo/Funções, exercidas no Município:	4,3%	12,8%	2,1%	8,5%	25,5%	44,7%	2,1%	100,0%
	Dirigente	Count	2	7	6	4	32	33	3	87
		% within 5.4. Cargo/Funções, exercidas no Município:	2,3%	8,0%	6,9%	4,6%	36,8%	37,9%	3,4%	100,0%
	Técnico Superior	Count	0	0	0	2	1	2	0	5
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	,0%	40,0%	20,0%	40,0%	,0%	100,0%
	Coordenador (Chefia)	Count	0	1	0	2	4	4	0	11
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	9,1%	,0%	18,2%	36,4%	36,4%	,0%	100,0%
	Outras	Count	0	0	0	0	0	2	0	2
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	,0%	,0%	,0%	100,0%	,0%	100,0%
Total		Count	4	14	7	12	49	62	4	152
		% within 5.4. Cargo/Funções, exercidas no Município:	2,6%	9,2%	4,6%	7,9%	32,2%	40,8%	2,6%	100,0%

5.4. Cargo/Funções, exercidas no Município: * 1.7. O investimento do Município na medição do desempenho vale a pena Crosstabulation

			1.7. O investimento do Município na medição do desempenho vale a pena						
			Discordo	Discordo um pouco	Não concordo nem discordo	Concordo um pouco	Concordo	Concordo fortemente	Total
5.4. Cargo/Funções, exercidas no Município:	Eleito	Count	1	2	3	5	26	9	46
		% within 5.4. Cargo/Funções, exercidas no Município:	2,2%	4,3%	6,5%	10,9%	56,5%	19,6%	100,0%
	Dirigente	Count	6	2	10	6	42	21	87
		% within 5.4. Cargo/Funções, exercidas no Município:	6,9%	2,3%	11,5%	6,9%	48,3%	24,1%	100,0%
	Técnico Superior	Count	0	0	0	1	3	0	4
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	,0%	25,0%	75,0%	,0%	100,0%
	Coordenador (Chefia)	Count	0	0	0	2	6	3	11
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	,0%	18,2%	54,5%	27,3%	100,0%
	Outras	Count	0	0	0	0	2	0	2
		% within 5.4. Cargo/Funções, exercidas no Município:	,0%	,0%	,0%	,0%	100,0%	,0%	100,0%
Total		Count	7	4	13	14	79	33	150
		% within 5.4. Cargo/Funções, exercidas no Município:	4,7%	2,7%	8,7%	9,3%	52,7%	22,0%	100,0%

5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções * 1.7. O investimento do Município na medição do desempenho vale a pena Crosstabulation

			1.7. O investimento do Município na medição do desempenho vale a pena						
			Discordo	Discordo um pouco	Não concordo nem discordo	Concordo um pouco	Concordo	Concordo fortemente	Total
5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	Menos 200	Count	3	2	1	2	19	11	38
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	7,9%	5,3%	2,6%	5,3%	50,0%	28,9%	100,0%
	De 201 a 500	Count	0	2	7	7	26	10	52
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	,0%	3,8%	13,5%	13,5%	50,0%	19,2%	100,0%
	De 501 a 800	Count	0	0	1	3	14	2	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	,0%	,0%	5,0%	15,0%	70,0%	10,0%	100,0%
	De 801 a 1200	Count	2	0	1	1	11	5	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	10,0%	,0%	5,0%	5,0%	55,0%	25,0%	100,0%
	Mais de 1200	Count	1	0	3	1	9	4	18
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	5,6%	,0%	16,7%	5,6%	50,0%	22,2%	100,0%
Total		Count	6	4	13	14	79	32	148
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	4,1%	2,7%	8,8%	9,5%	53,4%	21,6%	100,0%

5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções * 5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios? Crosstabulation

			5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios?							
			Totalmente negativa	Negativa	Pouco negativa	Opinião Neutra	Pouco positiva	Positiva	Totalmente positiva	Total
5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	Menos 200	Count	1	5	2	3	8	17	2	38
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	2,6%	13,2%	5,3%	7,9%	21,1%	44,7%	5,3%	100,0%
	De 201 a 500	Count	1	3	3	8	22	16	0	53
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	1,9%	5,7%	5,7%	15,1%	41,5%	30,2%	,0%	100,0%
	De 501 a 800	Count	0	1	1	1	6	10	1	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	,0%	5,0%	5,0%	5,0%	30,0%	50,0%	5,0%	100,0%
	De 801 a 1200	Count	2	3	0	0	6	8	1	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	10,0%	15,0%	,0%	,0%	30,0%	40,0%	5,0%	100,0%
	Mais de 1200	Count	0	1	1	0	7	10	0	19
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	,0%	5,3%	5,3%	,0%	36,8%	52,6%	,0%	100,0%
Total		Count	4	13	7	12	49	61	4	150
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	2,7%	8,7%	4,7%	8,0%	32,7%	40,7%	2,7%	100,0%

5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções * 1.7. O investimento do Município na medição do desempenho vale a pena Crosstabulation

			1.7. O investimento do Município na medição do desempenho vale a pena						
			Discordo	Discordo um pouco	Não concordo nem discordo	Concordo um pouco	Concordo	Concordo fortemente	Total
5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	Menos 200	Count	3	2	1	2	19	11	38
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	7,9%	5,3%	2,6%	5,3%	50,0%	28,9%	100,0%
	De 201 a 500	Count	0	2	7	7	26	10	52
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	,0%	3,8%	13,5%	13,5%	50,0%	19,2%	100,0%
	De 501 a 800	Count	0	0	1	3	14	2	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	,0%	,0%	5,0%	15,0%	70,0%	10,0%	100,0%
	De 801 a 1200	Count	2	0	1	1	11	5	20
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	10,0%	,0%	5,0%	5,0%	55,0%	25,0%	100,0%
	Mais de 1200	Count	1	0	3	1	9	4	18
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	5,6%	,0%	16,7%	5,6%	50,0%	22,2%	100,0%
Total		Count	6	4	13	14	79	32	148
		% within 5.6. Dimensão na organização (em n.º de trabalhadores) do Município onde exerce o seu cargo/funções	4,1%	2,7%	8,8%	9,5%	53,4%	21,6%	100,0%

5.7. Ano de início de aplicação do SIADAP no Município * 5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios? Crosstabulation

			5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios?							
			Totalmente negativa	Negativa	Pouco negativa	Opinião Neutra	Pouco positiva	Positiva	Totalmente positiva	Total
5.7. Ano de início de aplicação do SIADAP no Município	2006	Count	3	4	2	3	17	22	0	51
		% within 5.7. Ano de início de aplicação do SIADAP no Município	5,9%	7,8%	3,9%	5,9%	33,3%	43,1%	,0%	100,0%
	2007	Count	0	5	1	5	20	19	4	54
		% within 5.7. Ano de início de aplicação do SIADAP no Município	,0%	9,3%	1,9%	9,3%	37,0%	35,2%	7,4%	100,0%
	2008	Count	1	5	2	1	8	8	0	25
		% within 5.7. Ano de início de aplicação do SIADAP no Município	4,0%	20,0%	8,0%	4,0%	32,0%	32,0%	,0%	100,0%
	2009	Count	0	0	2	1	2	3	0	8
		% within 5.7. Ano de início de aplicação do SIADAP no Município	,0%	,0%	25,0%	12,5%	25,0%	37,5%	,0%	100,0%
Total		Count	4	14	7	10	47	52	4	138
		% within 5.7. Ano de início de aplicação do SIADAP no Município	2,9%	10,1%	5,1%	7,2%	34,1%	37,7%	2,9%	100,0%

1.7. O investimento do Município na medição do desempenho vale a pena * 5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios? Crosstabulation

			5.9. Qual a sua opinião sobre o modelo SIADAP em vigor nos Municípios?							
			Totalmente negativa	Negativa	Pouco negativa	Opinião Neutra	Pouco positiva	Positiva	Totalmente positiva	Total
1.7. O investimento do Município na medição do desempenho vale a pena	Discordo	Count	1	4	0	0	2	0	0	7
		% within 1.7. O investimento do Município na medição do desempenho vale a pena	14,3%	57,1%	,0%	,0%	28,6%	,0%	,0%	100,0%
	Discordo um pouco	Count	0	1	2	0	1	0	0	4
		% within 1.7. O investimento do Município na medição do desempenho vale a pena	,0%	25,0%	50,0%	,0%	25,0%	,0%	,0%	100,0%
	Não concordo nem discordo	Count	1	1	2	2	6	1	0	13
		% within 1.7. O investimento do Município na medição do desempenho vale a pena	7,7%	7,7%	15,4%	15,4%	46,2%	7,7%	,0%	100,0%
	Concordo um pouco	Count	0	2	0	3	7	2	0	14
		% within 1.7. O investimento do Município na medição do desempenho vale a pena	,0%	14,3%	,0%	21,4%	50,0%	14,3%	,0%	100,0%
	Concordo	Count	2	4	2	4	28	38	1	79
		% within 1.7. O investimento do Município na medição do desempenho vale a pena	2,5%	5,1%	2,5%	5,1%	35,4%	48,1%	1,3%	100,0%
	Concordo fortemente	Count	0	2	1	2	5	20	3	33
		% within 1.7. O investimento do Município na medição do desempenho vale a pena	,0%	6,1%	3,0%	6,1%	15,2%	60,6%	9,1%	100,0%
Total		Count	4	14	7	11	49	61	4	150
		% within 1.7. O investimento do Município na medição do desempenho vale a pena	2,7%	9,3%	4,7%	7,3%	32,7%	40,7%	2,7%	100,0%